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OCCIDENTAL BERIBERI HEART DISEASE

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Although descriptions of beriberi date far back in the oriental literature, the modern concept of heart disease due to beriberi is dominated by the vivid descriptions of Wenckebach [1] in the Far East and by the observations of Weiss and Wilkins [2] in the United States. Beriberi has not, however, gained much recognition in the etiology of heart disease in this country even though the descriptions of the latter authors have been readily available.

In collaboration with Aalsmeer, a physician in Java, Wenckebach [1] described in 1932 a large heart, particularly the right side, with precordial pulsations and a "jumpy pulsus celer of increased frequency" in persons with slight to absent neurologic findings and beginning dependent edema. These patients had "curious hardness and swelling of the calf muscles," "pistol shot sounds" over the larger arteries and peripheral vasodilatation, and there was "quick and great benefit" afforded by rest. Shock and syncope were frequent. He confirmed the allegation of Shimazono and of Aalsmeer that epinephrine had an unfavorable effect on this state; that, paradoxically, vasodilatation increased after administration of epinephrine. All these signs of a rapid circulation in the face of heart failure are found in most descriptions of the disease in the Orient. Keefer,[3] however, while at Peiping, China, in 1930 noted the fast circulation in only a third of his patients. The banal signs of the others were fatigue, palpitation and dyspnea, symptoms which could occur with failing myocardium of any cause.

Weiss and Wilkins,[4] describing the picture in 35 instances of beriberi heart disease in the Boston City Hospital, again emphasized the rapid circulation. This was, however, by no means the rule, and these authors concluded that the disease was confined to no rigid syndrome.

The large group of cases of beriberi heart disease without the rapid circulation, which closely resembles other types of degenerative heart disease, still escapes frequent recognition. Some of the reasons for this become apparent after studying the cases of this disorder seen in the Cincinnati General Hospital in the last five years. It seems that the oriental concept of beriberi heart disease as characterized by Wenckebach's vivid criteria probably hindered the diagnosis in many instances. The clinical picture of the failing heart with exceedingly rapid circulation is not likely to be overlooked; it is, however, readily remembered in preference to the majority of less dramatic case studies presented in this hemisphere.[5] In our studies the combined skill of the nutritionist, the cardiologist, the neurologist and the neuropathologist was applied to the material at hand. From this study evolved a new and less rigid set of criteria for the diagnosis of beriberi heart disease. This reorganization of the requirements, in harmony with modern concepts of nutrition, cardiology and neurology, has been described by one of us.[6]

This report is concerned with the available material afforded by the study of the 12 cases which were diagnosed in the five years that began in 1940. Since there were approximately 12,000 medical admissions in this period, the incidence was 0.1 per cent. Five of the patients in this group died in the hospital, and three autopsies were performed.

CLINICAL OBSERVATIONS

The 12 cases conform for the greater part to the criteria described by Blankenhorn.[6] These requirements are (1) insufficient evidence for other etiology, (2) three or more months on a thiamine deficient diet, (3) signs of neuritis or pellagra, (4) enlarged heart with sinus rhythm, (5) dependent edema, (6) elevated venous pressure, (7) minor electrocardiographic changes and (8) recovery with decrease in heart size or autopsy consistent with beriberi heart disease.

First thought of beriberi usually came with the realization that the etiologic nature of the heart disease was obscure. Initial and final elimination of coronary arteriosclerosis as a cause was always difficult. None of the patients suffered from angina or precordial oppression. There was seldom any persistent fever or persistent leukocytosis which might suggest Fiedler's isolated myocarditis. Since 11 patients were men and since the only woman was 56 years of age, postpartum myocardosis did not enter the differential diagnosis. We

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6. Blankenhorn, M. A.: The Diagnosis of Beriberi Heart Disease, Ann. Int. Med. **23**: 398, 1945.

have not observed the "idiopathic hypertrophy with mural thrombosis" described by Dock.[7]

Alcoholism accounted for the poor dietaries of 11 patients. The majority of the diets, as far as assessment was possible, were deficient not only in thiamine but also in the other water soluble vitamins, particularly niacin, riboflavin and ascorbic acid. One patient, though an alcoholic addict, had apparently been eating amounts of the essential nutrients which under normal conditions would have been adequate. This person, however, proved to absorb many substances poorly. In every instance the patient had been existing on a diet deficient in thiamine for longer than three months. Although the work of Williams, Mason and Smith [8] and Williams, Mason, Power and Wilder [9] suggests that three months may be in the region of the time limitation for the production of cardiac abnormalities, only recently has transitory heart failure due to beriberi been induced.[10] Certainly the time interval is probably subject to wide fluctuation, since the degree of hypovitaminosis, individual variations, the amount of activity, the presence of complicating disease and many other factors will influence the final nutritional balance. Actually ninety days is an arbitrary point selected to aid the evaluation of the problem.

TABLE 1.—*Incidence of Alterations in Electrocardiograms of Ten Patients with Beriberi Heart Disease*

	No. of Cases
Low voltage of T waves and/or QRS	7
Inverted T waves in one or more leads	5
Premature auricular and ventricular contractions	2
Long PR interval	2
Depressed ST segments (digitalis)	2
Long QT interval	1
Tachycardia (90 or more) (Clinically 10 of the 12 had tachycardia)	6
Inverted T_3 and Q_3	1
Bundle branch block	1
Auricular fibrillation and heart block	1
Known reversion to normal electrocardiogram	4

In all 12 cases there was other clinical evidence of nutritive failure. Always there was some indication of peripheral neuritis or of pellagra. In 6 cases (1, 2, 4, 5, 6 and 12) evidence for both disorders was found. This combination is to be expected and sought for, because of the concomitant natural occurrence usual for thiamine and niacin. Pellagra was diagnosed in the presence of the typical acute erythematous and the chronic hyperkeratinized lesions of the skin or in the presence of the acute painful glossitis. Although the question of the presence of peripheral neuritis sometimes was delicately dependent on the combination of tender calf muscles and absent ankle jerks, alteration of other reflexes was usually observed along with changes in the sensory modalities, which were usually distributed in stocking fashion.

There were numerous additional observations to support a diagnosis of nutritive failure. Eight of the 12 patients had anemia, which in 3 instances was normocytic and in 5 macrocytic. Hypoproteinemia was consistent. In the 9 patients in whom it was measured the serum protein content ranged between 4.87 and 6.4 Gm. per hundred cubic centimeters, all but one of the values lying below 6. Two patients in whom gastric analysis was made had histamine refractory achlorhydria and 2 suffered from diarrhea. Eight of the 12 showed unmistakable delirium, and although in every instance it may have been due to alcohol or of the type that frequently accompanies heart failure, it may well have been nutritional in origin.

Ten of the patients during life showed clinical and roentgenologic evidence of cardiac enlargement. Patient 2 proved to have cardiac hypertrophy at autopsy, although this could not be demonstrated clinically. Patient 1 suffered pulmonary infarction, but thrombotic and embolic manifestations were not evident in the others. The cardiac rhythm was almost always sinoauricular. In 2 instances premature auricular contractions were frequent. In a third auricular fibrillation was finally abolished in favor of normal rhythm (case 5).

Dependent edema was present in 11 of the 12 patients and elevated venous pressure was measured from the antecubital veins in 9. The edema frequently disappeared after the patient was in bed but a few hours.

Most writers agree that the electrocardiographic changes are definite, but usually minimal and nonspecific.[11] Such changes have been induced in subjects on thiamine deficient diets and abolished by thiamine administration.[8] Electrocardiograms (serial) were

TABLE 2.—*Influence of Treatment on Course and Outcome of Beriberi Heart Disease*

Case	Symptoms and Duration	Time Lapsed Before Giving Thiamine	Treatment	Recovery Period and Outcome
1. H. R.	Dyspnea, orthopnea, weakness for 8 mo.; edema—2 days	1 day	Thiamine intravenously for 5 wk.; digitalis last 3 wk.	Slight improvement over 2 mo.; sudden death
2. H. S.	?	None	Thiamine and niacin, intramuscularly	Death in 8 days from acute pulmonary edema
3. F. R.	Dyspnea, weakness, edema for 1 month	None	Thiamine, intramuscularly and intravenously; digitalis first 3 wk.†	Moderate recovery in 6 wk.; probable relapse in 6 mo. or year
4. T. R.	Dyspnea—6 mo.; edema, neuritis and weakness 3 wk.	None	Thiamine, intravenously; mercupurin	Gradual recovery in 2 wk.; still alive 4 yr. later
5. J. K.	Dyspnea, orthopnea and edema for 10 days	4 days	Digitalis * first 21 days; thiamine, intravenously	Gradual recovery in about 1 wk.; no recurrence in 3 yr.
6. M. D.	Dyspnea 3 wk., then progressive edema	2+ days	Thiamine, intravenously for 9 days	Rapid recovery in 1 wk.; convalescence prolonged over 3 wk.; no recurrence
7. J. D.	Dyspnea, edema—3 weeks	2 wk.	Thiamine, intravenously	Steady and complete recovery in 1 wk.
8. G. B.	?	None	Thiamine, intravenously nicotinamide	Death second day
9. J. B.	Nervous, jaundice—3 weeks; edema—2 wk.; dyspnea—1 wk.	None	Thiamine, nicotinamide, Vit. K.	Death following vomiting
10. J. B.	Dyspnea—1 yr.; edema—19 days	.....	Digitalis,† diet	Moderately rapid recovery 25 days; dead 3 mo. later
11. F. K.	Dyspnea, edema—2 yr.	.....	Digitalis,‡ diet only	Slow recovery in 6 wk.; no relapse without digitalis—6 mo.
12. C. B.	Edema—6 mo.?	.....	.....	Death—24 hours

* No effect. † Questionable effect. ‡ No immediate effect.

7. Dock, W.: Marked Cardiac Hypertrophy and Mural Thrombosis in the Ventricles in Beriberi Heart, Tr. A. Am. Physicians **55**: 61, 1940.

8. Williams, R. D.; Mason, H. L., and Smith, B. F.: Induced Vitamin B_1 Deficiency in Human Subjects, Proc. Staff Meet., Mayo Clin. **14**: 787, 1939.

9. Williams, R. D.; Mason, H. L.; Power, M. H., and Wilder, R. M.: Induced Thiamine (Vitamin B_1) Deficiency in Man: Relation of Depletion of Thiamine to Development of Biochemical Defect and of Polyneuropathy, Arch. Int. Med. **71**: 38 (Jan.) 1943.

10. Keys, Ancel: Bi-Monthly Progress Report No. 20, Contract No. OEMcmr-27, Nov. 1, 1944, restricted.

11. Weiss and Wilkins.[4] Weiss.[2]

made in 10 of the 12 cases and showed abnormalities in all. One, case 4, showed a depressed T_3 and shallow Q_3, suggestive of a remote posterior infarction. In case 8 it revealed bundle branch block on the left side. In case 5 there were remarkable alterations as the patient improved. The first and second electrocardiograms demonstrated auricular fibrillation with the ventricular rate at 60 to 70, low voltage of the QRS complexes, T waves of low voltage in all leads and inverted $T_{1,4}$. A day after the second record, the electrocardiogram showed sinus rhythm and first degree heart block, low voltage T waves and QRS complexes, and inverted $T_{3,4}$. Thirteen days later and again four years later it was normal except for a PR interval always longer than 0.20 second. The most common discoveries throughout the group were low voltage and minor alterations in the T waves (table 1).

was rapid diuresis following the intravenous administration of thiamine and there was cardiac compensation. How common in general this rapid response is cannot be ascertained. The literature of the Orient is dated by the use of oral and impure preparations. In those instances in which thiamine has been used parenterally an adequate control period of rest in bed has seldom been employed. Some of our patients (10 and 11) improved on unrestricted diet and rest alone.

The slow improvement following the parenteral administration of thiamine to 6 of our patients and also of patient 1, who died later and was examined post mortem, is certainly compatible with beriberi, particularly protracted beriberi in which irreversible damage may have occurred in tissues responsible for the clinical picture of the heart disease. A direct correlation (table 2) between a short duration of symptoms and

TABLE 3.—*Twelve Cases of Beriberi Heart Disease and the Criteria for Diagnosis at the Cincinnati General Hospital*

Case Number	Age	Sex	Enlarged Heart: Transverse Diameter of Chest (cm.)	Enlarged Heart: Transverse Diameter of Heart (cm.)	Enlarged Heart: Decrease in Heart Size (cm.)	Rhythm	Dependent Edema	Elevated Venous Pressure (cm. H_2O)	Other Signs of Deficiency Disease	Abnormal Electrocardiogram	Absence of Other Etiology	3+ Months Poor Dietary	Recovery or Autopsy Consistent with Beriberi Heart Disease
1. H. R.	41	M	28	18	−2	Normal	+	0 10	Pellagra, ? neuritis	+	+	+	Autopsy
2. H. S.	46	M	26	11	...	Normal	0	0	Pellagra, neuritis	Not made	+	+	Autopsy
3. F. R.	33	M	27	14.5	−3.5	Normal	+	+ 29	Neuritis	+	+	+	Improved
4. T. B.	53	M	28	15	?	Normal	+	+ 14	Pellagra, neuritis	+	?	+	Recovered
5. J. K.	47	M	29	13.5	−2	Auricular fibrillation first degree; heart block; normal	+	+ 15	Pellagra, neuritis	+	+	+	Improved
6. M. D.	56	F	24	14	−2.5	Normal	+	Clinical elevation +	Pellagra, neuritis	+	+	+	Recovered
7. J. D.	55	M	27.5	14.5	−2	Normal	+	+ 21	Neuritis	+	+	0	Recovered
8. G. B.	67	M	..	..	...	Normal	+	± 12.5	Pellagra	+	?	+	Death
9. J. B.	39	M	31	18.5	...	Normal	+	+ 15	Pellagra	+	+	+	Death; primarily cholemia
10. J. B.	53	M	29	15	...	Normal	+	+ 17.5	Pellagra	+	?	+	Improved; dead on admission 3 mo. later
11. F. K.	48	M	28.5	16	−3	Normal	+	+ 20	Neuritis	+	?	+	Improved
12. C. B.	33	M	..	..	...	Normal	+	0 10	Pellagra, neuritis	Not made	+	?	Autopsy

Almost any failing heart is dilated and sometimes hypertrophied. As compensation recurs the heart decreases in size. This is particularly true of the heart in beriberi of short duration and can be demonstrated best by the teleoroentgenogram. This improvement with rest and with the administration of thiamine is one of the characteristics of the disorder. Failing this, autopsy findings consistent with beriberi were considered of significance. When beriberi heart disease was suspected the patient was put on a strict regimen which included rest in bed and a diet very low in thiamine. A control period was pursued as long as the patient's condition permitted. Large doses of thiamine were then given intravenously; doses of 50 to 100 mg. were frequently employed simply in order that there might be no doubt that enough of the medicament had been given to be effective. Although 7 of the patients improved and significant decrease in the size of the heart was demonstrated by x-ray in all 6 cases in which it was attempted, only in case 6 was there dramatic improvement. Here within twenty-four hours there

a short period of recovery is not certain but seems likely. The relation cannot be certified when it is dependent on the unreliable history of an alcoholic addict. It must be correlated with the biochemical lesion of thiamine deficiency.

The condition of the majority of the patients was critical when they came to the hospital. Death occurred in 5; in 1 it was probably due to cholemia (case 9). In the others it occurred rather suddenly (cases 1, 2, 8 and 12). In 3 of these autopsy was performed and observations were consistent with beriberi heart disease.

Table 3 shows how the cases in this group fit in with the criteria which have been outlined. The traditional signs of oriental beriberi were not wanting in some of the patients, but their frequency was such as to confirm the diagnosis in less than half the cases. Table 4 indicates the incidence of the signs which Wenckebach employed. The severity of the signs and symptoms and the kind of criteria offered for the diagnosis of beriberi heart disease constitute an admission that we recognize the disease only in its latest stage.

It is likely that the early changes are biochemical and give no clinical sign.

Digitalis was given to 5 of the patients (table 2), and 3 may have benefited slightly from it. There is some uncertainty as to the origin of the dictum that digitalis is of no aid in this condition and that if the heart responds well to this drug the diagnosis of beriberi is eliminated. Certainly if the changes in the heart are purely degenerative and if failure occurs because of loss of "tone" and "contractility," as Wenckebach [12] has suggested, one would expect the administration of digitalis to help.

TABLE 4.—*Beriberi Heart Disease: Incidence of Traditional Signs; Twelve Cases at Cincinnati General Hospital, 1940 to 1945*

Name	Age, Sex	Circulation Time (Sec.)	Prominent Right Heart	Pistol Shot	Gallop Rhythm	Syncope or Shock	Critical Improvement After Thiamine	Comment
H. R.	41 M	0 40	0	0	+	+	0	Died, autopsy
H. S.	46 M	?	0	0	0	+	0	Died, autopsy
F. R.	33 M	0 21	+	0	+	+	0	
T. B.	53 M	+ 14	+	0	0	0	0	
J. K.	47 M	+ 13	+	+	0	0	0	
M. D.	66 F	?	0	0	0	0	+	
J. D.	55 M	+ 13	0	0	0	0	0	
G. B.	67 M	0 52	+	0	+	+	0	Died, no autopsy
J. B.	39 M	+ 13	?	?	0	+	0	Died, no autopsy
J. B.	53 M	+ 11	?	+	+	0	0	3 mo. after discharge; dead on admission
F. K.	48 M	+ 17	0	+	+	0	0	Korsakoff's psychosis
C. B.	33 M	+ 15	0	0	+	+	0	Died, autopsy

On the other hand, organic heart disease can be complicated by beriberi heart disease. We think that we can recognize some of these instances, but methods of diagnosis are not refined to the point where the diagnosis is made with any frequency or certitude.

PATHOLOGIC OBSERVATIONS

Alterations in the myocardium in beriberi heart disease have been described and studied repeatedly for many decades without revealing a pathognomonic picture and without contributing to an understanding of the mechanism of the clinical picture. Wright [13] and Wenckebach [12] found a heart which was large and dilated on the right side, consistent with their clinical observations. More recent observations in this country, however, do not agree with the consistency of a lesion on the right side. Weiss and Wilkins [4] found overall hypertrophy in 9 of 30 cases, dilatation alone in the remainder. The microscopic picture they describe, hydropic degeneration of the myocardial fibers and the conduction bundle, "intercellular edema" and an increase in collagen, is not at variance with earlier or later authors. It has been demonstrated, however, that the hypertrophy is not due to edema of the heart muscle.[4]

At autopsy 1 of our subjects (case 2) showed dilatation of both chambers of the heart; the other 2 had hypertrophy as well. In 1 there were petechial hemorrhages in the mural endocardium and in that covering the aortic and tricuspid valves. All showed degenerative changes in the muscle fibers and "interstitial edema," as shown in the accompanying illustration. These are the observations which are considered consistent with but not diagnostic of beriberi heart disease.

The lesions of the nerves were essentially degenerative and involved the central, peripheral and autonomic nervous systems. There was a triad of outstanding lesions present in both cases; namely, degenerative alterations of the cells of the nucleus sympathicus and of the tracts of the lateral horn in the upper cervical segments of the spinal cord, damage of the spinal cord roots and, finally, far advanced degeneration of the nervi vagi and of some of the peripheral nerve trunks. In addition there were mild cellular changes within the sympathetic chain (swelling and chromatolysis). Similar cellular changes were frequently observed in cases of beriberi (Wright [13] and others). In view of the fact, however, that many factors may be responsible in the production of diffuse changes in nerve cells, and since they occur in so wide a variety of diseases, such changes hardly can be interpreted as pathognomonic for the morbid process.

Lesions found in the tracts (lateral horn) and roots of the spinal cord appear to be of somewhat greater significance. A review of the literature dealing with neuropathologic studies on beriberi in human beings failed to disclose a detailed description of these structures. The lesions most frequently described in beriberi are those of peripheral neuritis (Wright,[13] Kürsterman,[14] Eddy and Dalldorf,[15] Williams and Spies [16] and many others). Only occasionally are there mentioned alterations of the roots of the spinal cord (Rumpf and

Myocardial degeneration in case 12. Interstitial spaces are widened as if by edema and contain small amounts of granular material. The parenchyma is granular and shows some vacuolization.

12. Wenckebach, K. F.: The Riddle of Beriberi Heart, in Libman Anniv., **3**: 1199, 1932.
13. Wright, Hamilton: A Discussion on the Etiology and Pathology of Beriberi, Brit. M. J. **2**: 1095, 1905.
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15. Eddy, W. H., and Dalldorf, G.: The Avitaminoses, Baltimore, Williams & Wilkins Company, 1937.
16. Williams, R. R., and Spies, T. D.: Vitamin B_1 and Its Use in Medicine, New York, Macmillan Company, 1938.

Luce,[17] Mendès,[18] Durck,[19]) and of the dorsal columns (Wright,[13] Mendès,[18] Durck,[19] Vedder,[20] Hsü Ying-Kuei[21]). Wright, who reported a detailed study of a large series of cases of beriberi, concluded that "observed atrophy in the terminations of the vagal inhibitory fibers, in the heart muscle, axonal reaction in the cells of the ambiguus and vagal portion of the combined nuclei in the bulb . . . are conclusive evidences that almost the entire cardiac nervous system is affected. . . ."

The lesions of the nerves observed in the present study showed for the first time degenerative alterations of the cells of the nucleus sympathicus and of the tracts of the lateral horn in the upper cervical segments of the spinal cord. The exact mode by which the nervous regulation of the cardiac function is affected in beriberi is not known. Is the primary site of damage in the spinal autonomic center followed by a secondary degeneration of the spinal cord roots and nervi vagi? Or does the process of degeneration progress centripetally from the peripheral terminations toward the spinal cord? It is beyond the scope of the present report to attempt to answer this pertinent question. Additional information on beriberi in man, including a careful study of the spinal cord and spinal cord roots, will be needed to establish the significance of the lesions of the central nervous system in the pathogenesis of beriberi heart disease.

SUMMARY

In five years at the Cincinnati General Hospital we have been able to recognize beriberi heart disease in 12 patients, an incidence of 0.1 per cent of all medical admissions. Five of these patients died in the hospital and 1 three months later at home. From these studies we may draw the following conclusions: The beriberi heart disease in this country is likely to be missed if one follows strictly the description given by Wenckebach. Although the failing heart with the signs of fast circulation occurs and is a vivid picture, the commoner type resembles any other type of degenerative heart disease. Therefore other criteria have been established to aid in its recognition. Important among these are the elimination of other etiologic agents, a diet deficient in thiamine for longer than three months and the presence of other evidence for nutritive failure, particularly neuritis or pellagra.

The histories reveal that all the patients were chronic alcoholic addicts, but alcohol is not considered a direct cause of the disorder. The onset varied, being either sudden or gradual, and healing occurred in the same fashion. Response to thiamine was not dramatic save in 1 instance. It is thought that the duration and the severity of the deficiency play a part in the reversibility or irreversibility of the process.

The autopsies of 3 of the patients revealed facts consistent with previous descriptions of beriberi, and in 2 instances in which the nervous system was examined definite lesions of the central, peripheral and autonomic nervous systems were revealed.

REPORT OF CASES

CASE 1.—*History.*—H. R., a white man aged 41, a waiter, was first brought to the hospital in 1939 because of chronic alcoholism and delirium tremens. At that time a teleoroentgenogram of the chest showed the transverse diameter of the heart to be 14 cm. in a chest of 29 cm. On Oct. 6, 1943 he appeared in the heart clinic, where the attending house officer diagnosed beriberi heart disease and admitted him to the hospital. Some eight months before he had been rejected at an army examination because of "heart disease." He knew of no signs or symptoms at that time but shortly thereafter began to notice dyspnea, orthopnea and weakness. He continued to work until stricken by a cold and cough three weeks prior to admission. There was some pain in the left anterior portion of the chest at that time, accentuated by a cough, and sputum of unknown nature was produced. The dyspnea progressed, and two days before his visit to the clinic his ankles swelled. Because of the cold he increased his whisky and decreased his food intake. He became nervous, irritable and insomnious. A variable story suggestive of neuritis was obtained by direct questioning; on some occasions he admitted having numbness and tingling in the legs, burning of the feet and cramps in the calves and on others he denied these symptoms.

The only notes of significance in the past were that he had been a heavy drinker for twenty years and had experienced anorexia during most of that time. An analysis of his diet was difficult, but it appeared to have been exceedingly low in protein, thiamine and niacin and moderately deficient in riboflavin. It was apparent that most of the caloric intake was supplied by alcohol.

Incidental in the history were blindness of the left eye following a blow from a baseball at the age of 17 and progressive deafness of the left ear for six years.

Physical Examination.—The temperature was 97 F., pulse rate 120, respiratory rate 32 and blood pressure 110 systolic and 86 diastolic. The patient displayed a varying amount of confusion and delirium, and within a few hours it was necessary to restrain him. He was orthopneic. There was an external strabismus of the left eye and an opacity of the lens. The outer edge of the tongue was smooth and somewhat reddened—other observers later described it as magenta with papillary atrophy along the edges. The pharynx was diffusely injected. The chest was clear. The heart was enlarged to the right and the left. There was a soft systolic murmur at the apex. The pulmonic second sound was accentuated. At times a diastolic gallop could be heard. The liver was tender and extended 3 to 4 fingerbreadths below the costal margin; the surface was soft and smooth. There was moderate edema and cyanosis of the lower extremities. The ankle jerks were weak and several observers could not agree on the presence or absence of peripheral neuritis as manifested by tenderness of the calves and stocking paresthesia.

Laboratory Examination.—The count of red blood cells was 4.75 million, hemoglobin content 17 Gm. per hundred cubic centimeters and white blood cells 7,200. Urine gave a 2 plus reaction for albumin. Circulation time with dehydrocholic acid was 40 seconds. Venous pressure was 10 cm. of water. The vital capacity of the lungs measured 1.2 liters. The serum protein content was 5.98 Gm. per hundred cubic centimeters. Reaction of the blood to the Kahn test was negative. The electrocardiogram revealed sinus rhythm with a PR interval of 0.22 second, QRS 0.10 second and T waves of low voltage in all leads. A teleoroentgenogram of the chest showed pulmonary congestion and a diffusely enlarged heart with a transverse diameter of 18 cm. (in a chest of 28 cm.).

Course.—Delirium and hallucinations occurred intermittently for some weeks. On the second day bronchopneumonia developed which cleared in a week with specific therapy. The temperature varied between normal and 100 to 101 F., the pulse rate between 90 and 120 and the respiratory rate between 22 and 46 for five weeks. After the examination on admission the blood pressure was always low; representative figures were 90/74, 74/60, 86/74 and 100/78. The leukocytes varied between 7,000 and 15,000. Albumin disappeared from the urine.

On the second day a course of thiamine 100 to 150 mg. a day intravenously was begun. This was supplemented with riboflavin and niacin amide, and brewers' yeast throughout the hospital stay. In the first few weeks the patient improved moderately but remained orthopneic and dyspneic. There was no azotemia; the icterus index was 23. At the beginning of

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the fifth week the venous pressure was 8.5 cm. of water and the circulation time was 42 seconds; at this time digitalization was begun. After receiving a calculated dose he was given 1.5 to 3 grains (0.1 to 2 Gm.) a day for the remaining days of life. In the second week of digitalis therapy there was some decrease in weight (7 pounds, or 3 Kg.) attributed to water loss, but the gallop rhythm and accelerated pulse persisted. Electrocardiograms taken from time to time revealed a PR interval varying between 0.24 and 0.16 second, QRS usually 0.08 second, notched and of low voltage, and low or inverted T waves. At the end of the fifth week (the first week of digitalis therapy) the x-ray revealed what was probably a pulmonary infarct in the right upper lung field. With digitalis the patient seemed a little less dyspneic, and the pulse rate varied between 88 and 100. The blood pressure remained low, 115/70 to 95/60; the gallop rhythm was heard intermittently. At the end of the seventh week x-ray examination at last showed a decrease in the transverse diameter of the heart from 18 cm. to 16 cm. At this time the patient was permitted to sit up in a chair but took the additional liberty of walking about. On the fifty-sixth day he died suddenly in bed.

Necropsy.—At necropsy, diagnoses were cardiac hypertrophy and dilatation, myocardial edema and moderate degeneration with generalized visceral congestion and edema, including the lungs.

The microscopic changes in the nervous system, which are to be reported in detail elsewhere, included degenerative changes in the cerebral cortex, degeneration of the nerve fibers confined to the lateral horn of the gray substance, destruction of the nerve cells of the lateral sympathetic nucleus and appreciable damage of the vagus, phrenic and ischial nerves. The alterations in the ganglions of the sympathetic chain were minimal.

CASE 2.—*History.*—H. S., a Negro aged 46, an ice man, was brought to the hospital Aug. 18, 1942. A sister told of his chronic alcoholism and poor dietary. For seven weeks he had shown some mental deterioration and had to be forced to eat.

Physical Examination.—The temperature was 102 F., pulse rate 100, respiratory rate 24 and blood pressure 76/50. The patient was poorly nourished, somnolent and disoriented. The skin was dry and scaly in some areas. The mucous membranes were pale. The chest and lungs showed no abnormalities. The heart did not seem enlarged; rhythm was regular, the rate 100; no murmurs or gallop rhythm were heard. There was slight tenderness in the upper portion of the abdomen on the right side, although the liver was not felt. Lesions on the legs were suggestive of pellagra. Tenderness of the calves was considerable. Deep reflexes in the arms were hyperactive and in the legs hypoactive. General cutaneous hyperesthesia was more decided in the legs.

Laboratory Examination.—A teleoroentgenogram showed a heart of normal size (11 cm. in a chest of 26 cm.). The bronchovascular markings were accentuated. The urea nitrogen content of the blood, 102 mg. per hundred cubic centimeters two days after admission, fell to 24 mg. on hydration. Reaction of the blood to the Kahn test was negative. The serum calcium content was 11.1 mg. per hundred cubic centimeters. No free acid was present in gastric secretions. Three stool specimens gave positive tests for blood. There was a macrocytic anemia: red blood cells 2.2 million and hemoglobin content 9.2 Gm. per hundred cubic centimeters, and white blood cells 7,600. Results of urinalysis were normal. The cerebrospinal fluid was normal.

Course.—The temperature was subnormal for thirty-six hours. Then followed an irregular course, never exceeding 100.4 F. The pulse rate ranged between 70 and 110. Respirations were usually in the neighborhood of 30 a minute. Throughout his stay the patient had considerable diarrhea. Measures were taken to restore hydration. He was given transfusions of blood, thiamine by the parenteral route and niacin daily. As he responded a bit it seemed that he had a Korsakoff's psychosis. The blood pressure varied between 95/54 and 122/80. After the first few days the liquid stools became black.

On the eighth day he suddenly began to cough and to expectorate large quantities of brownish, purulent, frothy sputum amounting to 200 cc. Coarse rales appeared at the base of the left lung and in the right axilla. The attack subsided only to recur later in the day. Choking on the large quantities of sputum, the patient died.

Pathologic diagnoses were myocardial edema, granular degeneration and atrophy; decided congestion and edema of the lungs; peripheral neuritis; petechial hemorrhages in the aortic and tricuspid valves, beneath the endocardium and in the gastrointestinal tract. The nervous system was not examined in detail.

CASE 3.—*History.*—F. R., a white man aged 33, a bartender, was brought to the hospital in coma on Aug. 14, 1944. The record showed that he had been admitted for delirium tremens and chronic alcoholism three years before. One month before admission he had experienced the onset of dyspnea, weakness and edema of the ankles. These became worse so that he could not climb stairs for two weeks before coming to the hospital. Orthopnea had appeared three or four days earlier, and he quit work. He was found unconscious and cyanotic by a relative on the day of admission. He had been a heavy drinker for years and visited other bars after closing the one at which he worked. His dietary was so irregular that it could not be definitely evaluated, but it seemed deficient in most nutrients.

Physical Examination.—The temperature was 100 F., pulse rate 70 and respiratory rate 36. Blood pressure could not be obtained, and the patient could not be roused. Extremities were cold and cyanotic, the pupils dilated, the veins of the neck distended. The heart sounds were of good quality with a regular rate of 70. As the blood pressure rose, a gallop rhythm became evident. Rales were heard over the upper lobe of the right lung. The liver was much enlarged. There was moderate edema of the ankles. No reflexes were obtained.

Despite distended neck veins, the patient was given an intravenous injection of 1,000 cc. of 5 per cent glucose in saline solution and then 100 cc. of 50 per cent glucose; caffeine, nikethamide, oxygen, thiamine and niacin were included in the drugs given in the receiving ward. In the medical service shortly thereafter he was given 4 units of plasma (1,200 cc.). After 2 units the blood pressure was 80/50. Venous pressure was 29 cm. of water. Circulation time with papaverine hydrochloride was 17 seconds. When the blood pressure reached 140/90 that night the patient finally responded well. A 30 inch roentgenogram of the chest showed a homogeneous density over the entire right lung field and increased bronchovascular markings on the left. On the following day (first hospital day) physical examination revealed certain alterations. The blood pressure was 150/90, the heart rate 120. The pulse became bounding. The apical impulse was felt 12 cm. to the left of the midsternal line. Gallop rhythm persisted. There were signs suggestive of pneumonia over the right upper lobe of the lung. Edema had disappeared and there was moderate peripheral neuritis in the legs. The patient passed a tarry stool. Laboratory examination revealed white blood cells 22,000, no anemia, normal urine, and stool positive for blood. The electrocardiogram showed low voltage T waves, T_3 inverted, $ST_{2,3}$ depressed. The urea nitrogen content of the blood was 27 mg. per hundred cubic centimeters.

Course.—The patient was given sulfadiazine and digitalized. The temperature and pulse remained elevated. On the fifth day the venous pressure was 5 cm. of water and the circulation time with dehydrocholic acid was 20 seconds. The administration of 50 mg. of thiamine intramuscularly daily was begun at this time and that of sulfadiazine was discontinued. On the second day a teleoroentgenogram of the heart showed the greatest diameter to be 14.5 cm. in a chest of 27 cm. One week later it measured 12.5 cm. During this time, although the fever cleared, the elevation of the pulse rate persisted, 96 to 120. The administration of digitalis was discontinued on the twenty-first day. General improvement continued, although there was wide variation in the pulse rate. On the forty-first day x-ray studies demonstrated the transverse cardiac diameter to be even smaller, 11 cm. An electrocardiogram at this time showed sinus rhythm 100, T_1 of low voltage and diphasic, $ST_{2,3}$ slightly depressed. The patient was discharged on the fifty-third day, his pulse still somewhat accelerated, his blood pressure 114/72 and the vital capacity normal.

He was known to be alive a year later but was still a confirmed alcoholic addict and had edema of the ankles and dyspnea.

CASE 4.—*History.*—T. B., a white man aged 53, was admitted on Dec. 25, 1941 complaining of swelling, numbness, tingling and weakness of the legs which had persisted for three to four weeks. A brief hospitalization in 1940 for corneal ulceration revealed that he was a chronic alcoholic addict, consuming 2 to 3 glasses of beer, ½ pint of whisky and ½ to 1 quart of wine daily. At that time he apparently showed some signs of mental deterioration.

The present illness began two years before with nervousness and increased consumption of alcohol. Unwarranted dyspnea on exertion was first noted during the previous summer. For three weeks there had been increasing swelling of the feet and angles, and the legs felt numb. Weakness progressed rapidly in this time and made the patient bedfast. His diet had been made up largely of bread and canned soups.

Examination.—At the initial examination the temperature was 98 F., pulse rate 90, respiratory rate 26 and blood pressure 150/80. The patient was lying flat in bed and was confused and euphoric. There was diffuse pellagrous erythema of the lower extremities. The corneal ulcer of the right eye was healed with scarring. A few fine rales were heard at the bases of the lungs at the height of inspiration. By percussion the heart seemed of normal size. There were no murmurs; premature contractions were infrequent. The pulmonic and aortic second sounds were equal. There was rather vigorous venous pulsation in the right side of the neck. A massive soft edema extended above the sacrum. The calves were tender, the knee jerks and ankle jerks absent. There was a stocking type of hyperesthesia of the lower two thirds of the legs and considerable weakness of both lower extremities.

On the second day a teleoroentgenogram of the chest showed the heart to be enlarged, 15 cm. in a chest of 28 cm. There was some widening and elongation of the aorta. There was evidence of pulmonary congestion and of a small amount of fluid in the right hemithorax. An electrocardiogram showed a sinus rate of 80, PR interval of 0.18 second, an inverted T_3 and a Q_3. There was a mild macrocytic anemia; red blood cells numbered 2.75 million; the hemoglobin content was 10.7 Gm. per hundred cubic centimeters; white blood cells numbered 4,900, with a normal differential count. On analysis the urine and stool were not remarkable. The reaction of the blood to the Kahn test was negative. Lumbar puncture revealed no abnormalities. The serum protein content was 5.85 Gm., with albumin 3.52 Gm. and globulin 2.33 Gm. per hundred cubic centimeters. The nonprotein nitrogen content was 28 mg. per hundred cubic centimeters. On the fifth day, after a struggle, the venous pressure was 19.5 cm. of water and the circulation time with cyanide was 14.2 seconds. On the following day under quiet circumstances the venous pressure was 14 cm. of water.

Course.—On the first day the patient was given 1 cc. of mercupurin and 10 mg. of thiamine parenterally; the next six days he received 50 mg. of thiamine daily. Niacinamide 150 mg. was also given daily. The diet was high in calories, proteins and vitamins. On this regimen the edema gradually receded. His weight dropped from 159 pounds (72 Kg.) on the third day to 136½ pounds (62 Kg.) on the thirteenth day. On the fourteenth day the total serum protein content was 8.44 Gm., with albumin 5.05 Gm. and globulin 3.39 Gm. per hundred cubic centimeters. After being up and around the ward for two days, edema free, the patient was discharged. Two weeks later he was seen in the medical clinic (blood pressure 144/80) in good condition, but he did not keep a return appointment.

In February 1945, three years later, he appeared in the receiving ward inebriated and nervous. He was given paraldehyde and sent home.

CASE 5.—*History.*—J. K., a Negro aged 47, admitted to the hospital on March 19, 1942, complained of shortness of breath. Previous hospital admissions were related to bilateral detached retinas. In 1937 the blood pressure was recorded as 130/85.

On the present admission he dated his illness from a cold in the head and a cough which began some ten days before. This was accompanied by increasing dyspnea and orthopnea and progressive dependent edema, which finally rose to involve the wall of the chest, the neck and the face. There had been some tightness in the chest and little sputum and a subjective sensation of moderate fever at the onset of the illness. He denied all symptoms of previous cardiovascular disease. He had lived alone for years, almost blind, supported poorly by charity. His diet could not be readily evaluated but was apparently rather high in carbohydrate and deficient in niacin and thiamine. He had been treated for syphilis some years before and had had gonorrhea in his youth.

Physical Examination.—The temperature was 98 F., pulse rate 108, respiratory rate 24 and blood pressure 164/100. The patient showed considerable anasarca. He was orthopneic but seemed alert. There were well demarcated areas of scaly pigmented skin over the ankles, the pellagrous nature of which was disputed by competent observers. The follicular pigmentation of the legs was suggestive of scurvy. There was thought to be some fluid in the thorax, and a few fine moist rales were heard at the bases of both lungs. The heart was enlarged to the left; the apical impulse was 12.5 cm. to the left of the midsternal line. At times there were frequent extrasystoles, but the rhythm was usually regular. A soft systolic murmur which was present at the apex on admission disappeared shortly. The pulmonic second sound was accentuated and louder than the aortic second sound. There was no bounding of the pulses. The liver was engorged, and fluid was noted in the abdomen. There was decided hyperesthesia of the soles, mild tenderness of the calves and absence of the ankle jerks.

Laboratory Examination.—Venous pressure was 15 cm. of water. The vital capacity was 56 per cent. Circulation times measured on the third day with cyanide and ether were 13 seconds and 7 seconds respectively. The urea nitrogen content of the blood on admission, which was 57 mg., soon fell to 21 mg. per hundred cubic centimeters. The count of red blood cells was 3.2 million, the hemoglobin content 11 Gm., the white blood cells 9,000. There was albuminuria (1 plus) the first two weeks but no other urinary abnormalities. The total protein content of the blood was 5.79 Gm. with an albumin to globulin ratio of 2 to 1. Reaction to the Kahn test was negative. Electrocardiograms on the second, fourth and fifth days showed auricular fibrillation, low voltage T waves, inverted $T_{1,4}$ and low voltage $QRS_{1,2,3}$. An x-ray of the heart was not made at admission.

Course.—The patient was given digitalis, an amount considered sufficient for digitalization in three days and continued on 1½ grains (0.1 Gm.) daily through the twenty-first day. Ammonium chloride was given for two days and in addition mercupurin and aminophylline. Symptoms under this management were progressive. On the fourth day observers noted an alteration in physical findings. There was a capillary pulse, with pistol shot sounds over the femoral arteries. The blood pressure was 146/88. His weight was unchanged since admission (185 pounds, or 83.9 Kg.). An x-ray of the heart showed the transverse diameter to be 13.5 cm. in a chest of 29 cm. At this time treatment with thiamine 50 mg. parenterally was begun and continued through the twenty-second day. Daily weights from this time showed a consistent fall presumably due to water loss; first week 17 pounds (7.7 Kg.), second week 23 pounds (10.4 Kg.). He finally maintained a weight of 135 pounds (16 Kg.). After a week of thiamine administration most of the pitting edema was gone. The liver was of normal size. The venous pressure was 8 cm. of water. Circulation times measured with ether and cyanide were 5 and 14 seconds respectively. Blood pressure varied between 180/96 and130/80. The pulse rate gradually became slower, 76 to 96 being the extremes in the second week. The electrocardiogram showed restoration of normal rhythm, low voltage and a PR interval of 0.20 second.

On the twenty-first day a cerebral thrombosis resulted in a hemiplegia of the left side. The patient survived this and improved gradually. Shortly before he was sent to the Chronic Disease Hospital on May 18, 1942 an electrocardiogram showed sinus mechanism, a PR interval of 0.20 second and low voltage $T_{1,2,4}$.

Two and one-half years later on Oct. 25, 1944 a follow-up study showed the hemiparesis of the left side persistent, moderate evidence of peripheral neuritis and a normal electrocardiogram except for a slightly prolonged PR interval. The heart was 2 cm. smaller, the transverse diameter measuring 12 cm.

CASE 6.—*History.*—M. D., a white woman aged 56, came to the hospital May 30, 1940 complaining of dyspnea, edema of the ankles and weakness.

Three weeks earlier she noted the onset of some shortness of breath while walking. This progressed and was followed shortly by swelling of the ankles. The swelling too increased, rising to the thighs, abdomen and chest and finally involving her face. Aching pain appeared in the upper quadrant of the abdomen on the right side, and there was some aching in all four extremities. Because of weakness and dyspnea she took to bed but had to be propped up by several pillows. There was one episode of sensation of precordial pressure. There was no past history relevant to cardiovascular or renal disease.

She had drunk heavily of beer for many years, and this had interfered considerably with the intake of food. In the past year she had included little else than beer in her dietary.

Physical Examination.—The temperature was 100.2 F., pulse rate 96, respiratory rate 28 and blood pressure 130/70. The patient was pale and appeared acutely ill. There were anasarca, ascites and bilateral hydrothorax. The edges of the tongue were smooth as the result of papillary atrophy. The gums were soft and bled readily. The veins in the neck were distended. Moist rales were heard throughout the chest. The heart beat was regular except for occasional premature contractions. The heart was enlarged to both the right and the left. There was a soft apical systolic murmur. This disappeared by the next day. The palpable peripheral vessels appeared normal. The liver was enlarged and tender. Peripheral neuritis was readily demonstrated in the feet and legs. The extremities were warm, and pulses of the dorsalis pedis artery were palpable. On admission her weight was 138 pounds (62.6 Kg.).

Laboratory Examination.—There was a macrocytic anemia with a hemoglobin content of 11 Gm. per hundred cubic centimeters and a red blood cell count of 2.3 million. Urinalysis revealed no abnormalities. An electrocardiogram showed only low voltage. The urea nitrogen content of the blood was 13 mg. per hundred cubic centimeters. The Kahn reaction was negative. The serum protein content was 6.4 Gm. per hundred cubic centimeters, albumin 3.1 Gm. and globulin 3.3 Gm. There was free hydrochloric acid in the gastric contents. An admission x-ray of the heart was not made.

Course.—The patient was given a diet calculated to be low in vitamin B complex. She was allowed salt and fluids to the extent desired. At the end of two and a half days without medication her condition was unchanged. At this time she was started on a course of parenteral thiamine 50 mg. daily and continued for nine days. In a week she had lost 21 pounds (9.5 Kg.) of water and improved appreciably. In the midst of this course of thiamine, on her ninth day in the hospital, a teleoroentgenogram showed the transverse diameter of her heart to be 14 cm. After nine days of thiamine administration she was given a good diet and continued improvement. Dating from the time of entry in the hospital there was a spontaneous moderate reticulocytosis and, without the aid of liver, the blood picture slowly approached normal after cardiac compensation had occurred. On the twenty-sixth day in the hospital an x-ray showed the greatest width of the heart to be 12.0 cm. The patient was discharged on her thirtieth day of hospitalization. Four months later her anemia was again moderately severe and her diet poor. The blood pressure was 115/65. No evidence of heart failure was found. An x-ray showed the transverse diameter of the heart to be 11.5 cm. Treatment with liver extract resulted in complete clearing of her anemia. A year later she was well and showed no evidence of heart disease.

CASE 7.—*History.*—J. D., a man aged 54, Scottish, was admitted to the hospital on Feb. 18, 1944 complaining of swelling of the feet and legs which had persisted for three weeks.

On hospitalization in 1936 the diagnoses had been cirrhosis of the liver and chronic alcoholism. At that time the patient complained of dyspnea and edema. He showed some vasomotor flushing, blood pressure 140/60 to 152/60, a heart with its greatest transverse diameter (by x-ray) 13.5 cm., a diastolic gallop and a systolic apical murmur which disappeared after a day; rales at the bases of the lungs, an enlarged, tender liver, and edema and ascites. An electrocardiogram showed tachycardia and low voltage of all complexes. The patient was given digitalis for five days only. In twelve days on a routine hospital diet he was well; there were no residual pathologic conditions.

At the present admission he told of edema of the ankles and shortness of breath, which began three weeks before. Although he quit work and rested, the edema and dyspnea progressed. There was no orthopnea. During this interval he noted a decrease in the volume of urine, accompanied by frequency.

As a bartender and janitor he had continued to drink heavily since 1936. A review of his dietary secured in restaurants showed it was fair in thiamine and poor in niacin, riboflavin, ascorbic acid and vitamin A. Protein and calories were adequately supplied.

Physical Examination.—The temperature was 97 F., pulse rate 114, respiratory rate 24 and the blood pressure 96/50 to 110/50. Although able to lie flat, he showed moderate dyspnea. The face was flushed. Along the edges of the reddened tongue the papillae were atrophied. There was generalized soft, mobile edema and ascites. The pulse was full but not bounding. The greatest transverse diameter of the heart was 14.5 cm. in a chest of 27.5 cm. (by x-ray). There was tachycardia, with regular rhythm. Over the aortic area there was a systolic murmur; there was also a diastolic gallop; the aortic second sound was greater than the pulmonic second sound. The liver seemed moderately enlarged. Reflexes were hypoactive and were absent at the ankles. The mild sensory changes suggested disease of the cord resembling posterolateral sclerosis in the opinion of the neurologist.

The weight of the patient on the third day was 149½ pounds (68 Kg.) after he had lost considerable edema. On the fifth day the venous pressure was 21 cm. of water and the circulation time with dehydrocholic acid was 13 seconds. Serum proteins, measured repeatedly, were in the range of 4.77 to 5.29 Gm. per hundred cubic centimeters, with an albumin-globulin ratio of 1 to 6; red blood cells numbered 3.18 million, the hemoglobin content was 11.5 Gm. and the white blood cells numbered 10,000. The urine showed a trace of albumin, a trace of sugar and a few white cells. Repeated urinalyses in the first four weeks showed sugar. An electrocardiogram, although showing low voltage notched QRS complexes, was thought fairly normal.

Course.—For most of the hospital stay the patient received supplemental amino acids. During the first week there was little alteration in his condition. At the end of this time venous pressure was still elevated and circulation time fast. The blood pressure was 120/60. Tachycardia increased in the second week when the patient was febrile; this was attributed to pleuritis. At the end of the second week when he had lost about 10 pounds (4.5 Kg.) of edema fluid (weight 139½ pounds, 63 Kg.), a course of thiamine was begun which ranged from 20 to 150 mg. a day given parenterally. In the following week the patient lost 24½ pounds (11 Kg.) of edema fluid. He was comfortable and edema free. The transverse diameter of the heart had decreased 2 cm. to 12 cm. The liver was no longer enlarged. The serum proteins had risen to between 5.9 and 6.6 Gm. per hundred cubic centimeters. The blood pressure rose to the range of 150/95 for several weeks but in the fifth and sixth weeks fell to 120/75 and 130/75. Various clinical tests revealed poor or retarded intestinal absorption accompanying achlorhydria and a low renal threshold for sugar. (The results of tests for liver function were controversial.)

He was discharged on the fifty-third day in good health except for the neurologic alterations. No digitalis was given throughout his hospital stay. On Sept. 12, 1945 he returned to the hospital again with beriberi heart disease and scurvy. The treatment and course were similar to the 1944 admission and he was discharged twenty-one days later in good condition.

CASE 8.—*History.*—G. B., a white man aged 67, was brought to the hospital on May 26, 1944 from a boarding house where he had been living on an old age pension. He was known as a chronic alcoholic addict, drinking ½ pint of whisky daily in addition to beer. He was confused and unable to give a history.

Physical Examination.—The temperature was 98 F., pulse rate 96, respiratory rate 32 and blood pressure 138/108.

The patient was well developed and obese, appearing acutely and chronically ill. There was acute pellagrous erythema over the arms, hands and legs, scrotum and perineum; there was purpura about the ankles. A diffuse ecchymosis was noted in the paraumbilical region in addition to an acute cheilosis and severe injection of the bulbar and tarsal conjunctivas. The edges of the tongue were smooth but not red. The gums were dirty and ulcerated but not scorbutic. Anasarca was pronounced. The heart was enlarged. The sounds were feeble. There were no murmurs, but a gallop rhythm was noted. Pulses of the dorsalis pedis artery were not felt. There were no capillary pulses. Respirations were periodic. There were signs of fluid at the bases of both lungs, and above these areas were fine rales. The liver was thought to be somewhat enlarged. The usual deep reflexes were normally active.

A roentgenogram showed definite enlargement of the heart which could not be measured, since the lower part of the silhouette was obscured by pleural fluid. The serum protein content was 5.29 Gm. per hundred cubic centimeters. An electrocardiogram showed a rate of 90, sinus rhythm, with a PR interval of 0.20 second and a QRS of 0.16 second. The T_1 was inverted, the T_3 diphasic. There was a bundle branch block on the left side. The hemoglobin content of the blood was 14 Gm. per hundred cubic centimeters; red blood cells 5.12 million, white blood cells 7,200. Urinalysis gave normal results. Serologic reaction to the Kahn test was 3 plus; urea nitrogen measured 48 mg. per hundred cubic centimeters. Cerebrospinal fluid was normal. The icterus index was 25. Circulation time (with dehydrocholic acid) was 52 seconds, a questionable determination. Venous pressure was 12.5 cm. of water.

Course.—The patient was given nicotinamide 200 mg. every four hours and 100 mg. of thiamine, both parenterally, daily. The pellagrous erythema cleared rapidly. Periodic breathing continued. He died slowly on the second day of hospitalization.

CASE 9.—*History.*—J. B., a white man aged 39, who entered the hospital June 12, 1944, had been a heavy beer drinker for twelve years and ate little. For three weeks he had noticed nervousness, visual hallucinations, anorexia and jaundice. For two weeks his abdomen had been swelling, and this was followed by swelling of the scrotum. For a week he had had a nonproductive cough and was short of breath. His stools had been frequent (three to four a day) for two weeks, and they became watery and black a day or so before admission. For three weeks he had lived on beer, tomatoes and cantaloups.

Physical Examination.—The temperature was 99 F., pulse rate 100, respiratory rate 24, blood pressure 110/70 and weight 229 pounds (104 Kg.).

He was fairly well developed and moderately jaundiced. There were numerous spider angiomas on the face, chest, back and upper portion of the abdomen. Palmar erythema was moderate. Over the elbows was a chronic pellagrous dermatitis. On the arms and legs the hair follicles were hyperkeratotic. There was anasarca, and the abdomen was tense with ascites. Echymoses spread through the skin on the right side of the body. The tongue was red at the tip and edges. There was moderate cheilitis and congestion of the conjunctival vessels. The veins of the neck were distended. One observer thought that the peripheral pulses were bounding; another thought them soft and regular. There were a few wheezes and rales at the bases of the lungs. The heart was enlarged; a teleoroentgenogram gave the greatest transverse diameter as 18.5 cm. in a chest of 31 cm. and revealed some pulmonary congestion. The cardiac rhythm was regular, with no murmurs or gallop rhythm. The liver was decidedly enlarged and smooth. Deep reflexes were present. The extremities were warm.

Laboratory Examination.—The circulation time of the blood (with dehydrocholic acid) was 13 seconds, and the venous pressure was 15 cm. of water. There was no anemia; the count of white blood cells was 14,700. Urinalysis showed a trace of albumin and of urobilinogen. The stool was black, liquid and tarry and the guaiac test gave a 4 plus reaction.

Electrocardiogram.—There was a sinus rhythm, with a rate of 90, a PR interval of 0.20 second, a QRS of 0.08 second and low voltage. The T wave had low voltage in all leads. The QT interval was prolonged. Serum protein measured 5.53 Gm. per hundred cubic centimeters. The Kahn reaction of the blood was negative. The icterus index was 80 on the first day and 100 on the third. The prothrombin clotting time was 51 seconds. The cephalin cholesterol flocculation test gave a 4 plus reading in twenty-four hours. The urea nitrogen of the blood measured 1.0 mg. per hundred cubic centimeters on the first day and 4.7 mg. on the second.

Course.—In addition to paraldehyde for his restlessness the patient was given 50 mg. of thiamine and 100 mg. of nicotinamide intravenously daily. Vitamin K was given intramuscularly daily. He did not improve. Death occurred suddenly following an attack of vomiting.

CASE 10.—*History.*—J. B., a white man aged 53, a bachelor, came to the hospital on Jan. 26, 1944 because of "swelling of the privates" of a week's duration.

In the past year the patient had noted some gradually increasing dyspnea on climbing the "105 steps" to his home. About twelve months prior to admission he had had edema of the ankles which responded to rest in bed. In the past ten days he had observed the progressive swelling of his body tissue which began in the ankles and spread upward, finally involving the abdomen, thorax and arms.

The only possible relevant past history was that of painful and swollen knees. This rheumatism had occurred in 1924 and lasted three days.

He was accustomed to drinking about 2 quarts of beer a day and supplemented this with wine. He earned $20 a week and lived with his mother and two brothers on a boarding house plan but frequently ate meals at a restaurant. The dietary history, taken and evaluated by an experienced dietitian, was considered unreliable but listed his dietary as poor in all members of the vitamin B complex and in vitamin C and fair in vitamin A, iron, phosphorus and protein.

Physical Examination.—The temperature was 101.8 F., pulse rate 108, respiratory rate 28 and blood pressure 142/60. There was extensive soft edema, present even in the wall of the chest and in the arms. The skin was warm, however, and there was an erythema of the legs extending to the knees; this area blanched on pressure. The veins of the neck were distended. Moist rales were heard at the lung bases, and the diaphragm appeared to be elevated. By percussion the heart did not seem enlarged. The rhythm was regular. There was a soft systolic murmur heard over the sternum. The pulses were bounding, and pistol shot sounds could be heard not only over the femoral but also over the dorsalis pedis arteries. The abdomen contained free fluid; the liver was moderately enlarged and tender. There was no tenderness of the calves, paresthesia or alteration of the deep reflexes.

Laboratory Examination.—The count of red blood cells was 3.68 million, the hemoglobin content was 10.0 Gm. per hundred cubic centimeters and the count of white blood cells was 20,700, an increase in the polymorphonuclear leukocytes. The urinalysis was normal. Serologic reaction to the Kahn test was negative. Serum protein measured 4.42 Gm. per hundred cubic centimeters. The urea nitrogen content of the blood was 6.1 mg. per hundred cubic centimeters.

On the first day of hospitalization, January 27, a teleoroentgenogram of the chest showed the greatest transverse diameter of the heart to be 15 cm. in a chest of 29 cm. and revealed some evidence of chronic passive congestion. An electrocardiogram showed all T waves of low voltage and a PR interval of 0.14 second.

Course.—The patient was given a calculated digitalizing dose in three days along with ammonium chloride. There was no improvement, and the temperature varied between 100 and 101 F. On the third day the blood pressure was 180/80, venous pressure 17.5 cm. of water and the circulation time with dehydrocholic acid was 13 seconds. Fever and leukocytosis were attributed to bronchitis and bronchopneumonia.

On the fifth day, since there had been no response, the administration of digitalis was discontinued and a period of observation was begun. The patient weighed 149½ pounds (68 Kg.). The total protein content of the blood serum was 4.87 Gm. per hundred cubic centimeters with an albumin-globulin ratio of 2.42 to 2.45 Gm., or 98 per cent. At this time the temperature reached normal. An electrocardiogram showed the effect of digitalis and a PR interval of 0.26 second. In the next few days, without medication, the patient's weight dropped from 149½ to 115 pounds (68 to 52 Kg.) as he lost edema fluid rapidly. The blood pressure varied between 185/75 and 135/65. The signs of fast circulation disappeared, and the venous pressure reached normal limits. The protein content of the serum rose rapidly to 6.16 Gm. per hundred cubic centimeters. The patient was placed on a maintenance dose of digitalis, but this was again discontinued at the time of discharge on February 21. At this time he was feeling well and able to be up and about without any discomfort. Other studies made the day of his discharge showed the heart size to be 14 cm. by teleoroentgenogram. The electrocardiogram revealed a PR interval of 0.21 second, T_1 low voltage, T_2 dysphasic, T_3 inverted. The protein content of the serum measured 7.03 Gm. per hundred cubic centimeters, with an albumin-globulin ratio of 4.05 to 2.98 Gm., or 1.36 per cent.

The patient did not return to the heart clinic as instructed. The record reveals that on May 20, 1944 he was dead on arrival at the admitting ward.

Case 11.—*History.*—F. K., a white man aged 48, was in the hospital in 1934 because of lobar pneumonia and delirium tremens. In 1942 he began attendance at the heart clinic because of dyspnea and edema. He showed only fair response to digitalis therapy. Although he was given diuretics periodically, he was never quite free of dyspnea and orthopnea and frequently had edema. Electrocardiograms were either normal or showed low voltage. His blood pressure ranged between 135/60 and 172/86.

On Nov. 29, 1944 he was admitted because of increasing severity of his symptoms. For a month he had had some twinges of pain of short duration below the left nipple, associated with exertion. For ten days his dyspnea had been extreme. He had been a chronic alcoholic addict for many years. His food was gleaned from the scraps and leftovers at a nearby saloon. There was little meat in his dietary. He had at times had aching in the legs and some numbness and tingling in the extremities.

Physical Examination.—The temperature was 99 F., pulse rate 118, respiratory rate 36 and blood pressure 140/70.

He was orthopneic; the skin was warm and perspiration was profuse. He displayed considerable acne rosacea over the face. The veins of the neck were moderately distended. No signs of congestion were noted in the chest. The heart was enlarged to the left. The rhythm was regular. There was a systolic murmur at the apex, transmitted into the axilla. A rough systolic murmur was heard at the base of the heart; the pulmonic second sound was greater than the aortic second sound. The walls of the radial vessels seemed thickened. The pulses were bounding and the extremities warm. The liver was enlarged but could not be palpated. There was slight edema of the ankles. The knee and ankle jerks were absent.

Laboratory Examination.—The hemoglobin content was 12.5 Gm. per hundred cubic centimeters, red blood cells 3.88 million, white blood cells 11,750. The urine gave a 1 plus reaction for albumin. The sedimentation rate of the blood was normal. Tests for liver function were consistent, with moderate hepatic damage. Electrocardiograms were normal except for changes due to digitalis therapy. A teleoroentgenogram of the chest on the third day showed the heart to measure 16 cm. in a chest of 28.5 cm.

Course.—The patient was given digitalis in maintenance doses and a routine diet. In twenty-four hours he was delirious, and he remained so for almost a week. A tachycardia and low fever continued during this time. On the tenth day the circulation time was 15 seconds with dehydrocholic acid and the venous pressure was 20 cm. of water. His weight was 150 pounds (68 Kg.). The peripheral pulses were still bounding, and pistol shot sounds were heard over the brachial and femoral arteries. Within four days without additional therapy the signs of fast circulation had disappeared. The venous pressure slowly returned to normal. Only a soft systolic murmur remained. The blood pressure varied considerably and was recorded at 140/85, 110/88 and 136/94. The pulmonic second sound remained accentuated. The greatest cardiac diameter in a chest 30 cm. in diameter was 16 cm. on admission, 16.5 cm. on the eighth day, 14 cm. on the eighteenth and 13 cm. on the thirty-seventh. He was discharged on his forty-second day in good condition. In the outpatient dispensary the administration of digitalis was discontinued and the patient was lost. Twelve months later he was found in a mental institution with Korsakoff's psychosis. There were no symptoms of heart disease.

Case 12.—*History.*—C. B., a white man aged 33, was brought to the hospital on May 28, 1945 in a delirious state. He intimated that his legs had been swollen for about six months. He was a chronic alcoholic addict, and nothing reliable concerning his diet or previous history could be learned. The temperature was 98.6 F., pulse rate 130 and respiratory rate 32. The blood pressure was 130/60 with some question as to the true diastolic level. The following day the blood pressure was 115/40. Hyperventilation was notable. There was partial internal ophthalmoplegia. Pupillary reactions to light were sluggish. The left pupil measured 3 mm. and the right 5 mm. There was a bilateral purulent conjunctivitis. Cheilosis was slight but definite. The gums and tongue were normal except for moderate pallor. Observers were not impressed by any increase in the size of the heart. Its rhythm was normal. There was a questionable systolic gallop. A harsh systolic murmur at the aortic area transmitted up into the neck and a systolic thrill over the vessels of the neck and an absent aortic second sound suggested aortic stenosis. The peripheral pulse was feeble in spite of the wide pulse pressure. There was evidence of fluid in the right side of the chest. The edge of the liver extended 2 to 3 cm. below the costal margin. Edema involved all portions of the body except the face. There was acute pellagrous erythema over the elbows, knees and feet, with secondarily infected excoriations. The deep reflexes were absent and there was hyperesthesia to the stroke of an applicator on the legs. The snout reflex was positive.

Laboratory Examination.—The hemoglobin content was 10.2 Gm. per hundred cubic centimeters, red blood cells 3.61 million and white blood cells 10,150. Urinalysis revealed no abnormalities beyond a few white cells. The urea nitrogen content of the blood was 22 mg. per hundred cubic centimeters; the test for vitamin C was negative, reaction to the Kahn test was negative; the carbon dioxide content of the plasma was 36 volumes per cent. The plasma chloride content expressed as sodium chloride was 524 mg. per hundred cubic centimeters; the serum protein content was 5.04 Gm. per hundred cubic centimeters. Examination of the spinal fluid revealed no abnormalities. The circulation time with dehydrocholic acid was 15 seconds. The femoral venous pressure was 10 cm. of water.

Course.—Although the patient's condition was critical it was not planned to administer thiamine immediately. Hyperventilation increased respirations reaching 40 a minute. The temperature rose to 102 F. Restlessness and delirium were controlled by paraldehyde. Twenty-five hours after admission the patient died suddenly.

Pathologic diagnoses were pronounced pulmonary edema with pulmonary congestion; cardiac hypertrophy and dilatation with myocardial degeneration and fairly well defined edema; generalized edema; decided fatty infiltration of the liver; serous leptomeningitis; cerebral congestion with slight perivascular hemorrhage; slight cerebral edema.

DELAYED SERUM SICKNESS REACTION TO PENICILLIN

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Although of infrequent occurrence, reactions to penicillin therapy occur with sufficient intensity to warrant their study and investigation. This report is concerned principally with the delayed serum sickness type of reaction which makes its appearance after the course of treatment has been completed.

Penicillin, born into therapeutics amidst World War II, has only recently been released in sufficient volume to permit its general use among the civilian population. As its use becomes even more extensive, reactions which are of relative rarity at present will of course be encountered more and more frequently, presenting diagnostic and therapeutic problems with which the clinician should be familiar.

INCIDENCE

One of the great factors which has led to the popular acclaim of penicillin is its relative lack of toxicity. Unfavorable reactions of all types are infrequent, and a fatal reaction is yet to be recorded. This lack of toxicity was emphasized as one of the chief characteristics of penicillin in the pioneer work of Florey and Jennings.[1]

The incidence of the urticarial type of reaction to penicillin has been variously reported by different investigators. Keefer [2] found urticarial reactions in 14, or 2.8 per cent, of 500 patients treated. Lyons [3] found urticaria to be the commonest single complication, occurring in 12, or 5.7 per cent, of 209 patients treated for surgical infection. Moore,[4] in a preliminary report on penicillin therapy of 1,418 patients with syphilis, noted only 8, or 0.56 per cent, reactions of the urticarial type and only 7 other types of cutaneous rashes attributed to the drug, none of which required interruption of treatment. Stokes,[5] also studying penicillin in the treatment of syphilis, observed but 2, or 1.2 per cent, urticarial reactions among 182 patients treated.

Throughout a period of twelve months of routine administration of penicillin to battle casualties in the evacuation hospital to which I was assigned during the Italian campaign, there were only 2 cases in which urticaria appeared with sufficient severity to warrant suspension of treatment. Although supportive statistics are not available, the incidence of all urticarial reactions was definitely low, undoubtedly less than 1 per cent. The incidence of the delayed type of reaction could not be ascertained as patients were quickly evacuated to base hospitals following initial surgery. One such case that did occur during a period of relative inactivity is herewith reported.

In a six month period in which penicillin was routinely given before and after surgery of war wounds in a 2,400 bed orthopedic service in a general hospital in the United States there was only 1 recorded case of a reaction of the delayed serum sickness type. In addition there was 1 other case among the hospital personnel.

The incidence, then, of urticarial reactions occurring during the course of treatment is not frequent; the delayed serum sickness type of reaction occurs even more uncommonly, possibly once in 1,500 or 2,000 cases.

CASES FROM THE LITERATURE

A search of the *Quarterly Cumulative Index Medicus* and the Surgeon General's Index since the clinical introduction of penicillin in 1942 revealed a paucity of literature on this subject. The following reported instances of delayed urticaria-like reactions to penicillin have been abstracted:

In December 1943 Lyons [3] reported urticaria as usually developing during treatment but found that it may occur as late as nine days after the cessation of treatment. He described the latter cases as showing a wide distribution of wheals over the body, swelling of the face and eyelids, swelling of the fingers and pains in the joints of the hands. These changes persisted for three to five days independent of the continuation or cessation of treatment, although they were temporarily relieved by the use of epinephrine and ephedrine sulfate. He further reported that subsequent courses of penicillin therapy in patients with a history of urticarial reaction during the first treatment period were uneventful and were not associated with recurrent urticaria. Lyons suggested that the symptoms were analogous to serum sickness but noted that neither eosinophils nor heterophil agglutinins were significantly or constantly increased in his patients. Tests for cutaneous and ophthalmic sensitivity during and after reactive phases were negative.

An instance of allergy to penicillin was reported by Criep [6] in October 1944 following the administration of penicillin to a veteran aged 23 with chronic suppurative osteomyelitis of the right hip. In this case the allergy was manifested as a massive generalized urticaria immediately following the administration of the first dose of penicillin after an interval of ten days following a fourteen day course of 200,000 units. The reaction recurred with each subsequent injection of the drug until its administration was discontinued six days later. There was no family or personal history of allergy.

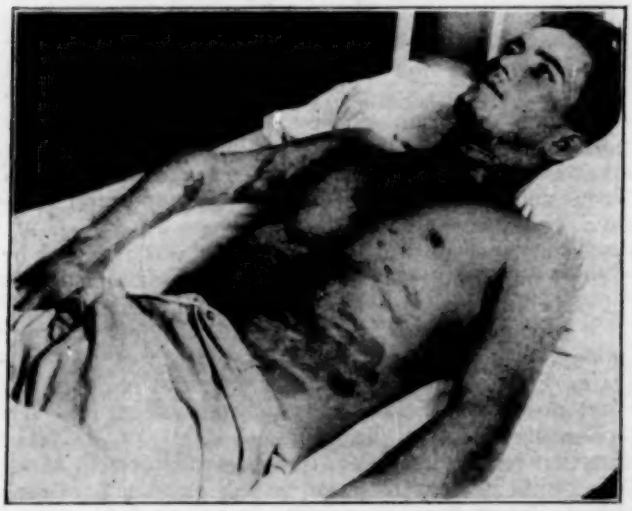
Barker [7] in February 1945 reported 1 case of contact dermatitis from direct handling of the product and a second of persistent urticaria in a wounded soldier treated with injections of penicillin for five days, with large confluent wheals on the trunk and extremities and with dermographism. There had been no previous disease of the skin and no evidence of current fungous infection. Intradermal cutaneous testing was positive in thirty minutes, persisting for twenty-four hours as an urticarial wheal.

Morris and Downing [8] administered 1 million units of penicillin to a patient with postoperative infection; four days after the last injection the patient noted itching of the left arm and hand, followed twenty-four hours later by erythema and edema of the left side of the body and the left arm and hand. The next day there was tense, pitting edema of the left hand and forearm, erythema, multiple ruptured and unruptured bullae filled with clear, thin, yellow fluid and multiple wheals on the left side of the face and trunk. These manifestations persisted for four days.

1. Florey, H. W., and Jennings, M. A.: The Principles of Penicillin Treatment, Brit. J. Surg. (supp) **32**: 112 (July) 1944.
2. Keefer, C. S., and others: Penicillin in the Treatment of Infections, J. A. M. A. **122**: 1217 (Aug. 28) 1943.
3. Lyons, Champ: Penicillin Therapy of Surgical Infections in the U. S. Army, J. A. M. A. **123**: 1007 (Dec. 18) 1943.
4. Moore, J. E., and others: The Treatment of Early Syphilis with Penicillin, J. A. M. A. **126**: 67 (Sept. 9) 1944.
5. Stokes, J. H., and others: The Action of Penicillin in Late Syphilis, J. A. M. A. **126**: 73 (Sept. 9) 1944.
6. Criep, L. H.: Allergy to Penicillin, J. A. M. A. **126**: 429 (Oct. 14) 1944.
7. Barker, A. N.: Allergic Reactions to Penicillin, Lancet **1**: 177 (Feb. 10) 1945.
8. Morris, G. E., and Downing, J. G.: Bullous Dermatitis (Dermatitis Medicamentosa) from Penicillin, J. A. M. A. **127**: 711 (March 24) 1945.

Sullens [9] recently reported that a white seaman aged 21, treated for acute gonorrheal urethritis with 100,000 units of penicillin in two separate courses twenty-three days apart, developed large urticarial wheals on the abdomen, back and hips six days after the last course was completed, followed later that day by arthralgia of the wrists and ankles, moderate edema of the feet and hands, headache, a slight elevation of temperature and moderately generalized lymphadenopathy. The urticaria spread to the extremities, face and scalp in the ensuing three days and then gradually subsided over a six day period. There was no effect from ephedrine, but epinephrine gave transitory relief from the pruritus and urticaria. Intradermal cutaneous tests showed a positive reaction to penicillin in five hours, with negative reactions in 3 controls. Sullens concluded that the patient was sensitive to something in the solution, either penicillin or an impurity.

Macey and Hays [10] described 3 cases of delayed reaction, varying in onset from two to five days after the last injection and characterized by an accelerated pulse rate, slight elevation of temperature, edema of the face and hands and generalized giant urticarial lesions. There was no dramatic response to the usual drugs such as epinephrine, ephedrine and calcium compounds. Macey and Hays believed that the reactions were due to a substance used in the preparation of the penicillin.



Appearance of patient 2, with delayed serum sickness reaction to penicillin, on third day (five days after last injection). Note urticaria of face, arms and trunk, edema of upper eyelids and swelling of metacarpophalangeal joints of right hand.

REPORT OF CASES

Three cases of delayed reaction to penicillin are herewith reported. The first case was originally reported in April 1945, in the Medical Bulletin of the Mediterranean Theater of Operations (restricted), but because of the limited distribution and availability of this publication it is again presented here in abstract form.[11]

CASE 1.—A white soldier aged 23 was admitted to the evacuation hospital on Feb. 1, 1945 with pneumonia of the left hilar area. His treatment included a course of penicillin of 25,000 units administered intramuscularly every three hours for five days, a total of 1 million units. On the third day of treatment his temperature fell to normal, and his symptoms cleared rapidly with a fairly smooth convalescence.

Five days after the cessation of penicillin therapy he complained of the sudden onset of itching "hives" on his arms and legs, soon spreading to his trunk. Investigaton revealed no unusual contact such as clothes or soap and no deviation from the ward diet. The family and personal history was negative for allergy. All medication had been suspended two days before the onset of symptoms.

The following morning the urticaria had spread to involve the face, the entire trunk and all four extremities, despite treatment with ephedrine sulfate, intravenous injections of calcium gluconate and epinephrine in tablet (hypodermic) form. On the second day of the reaction the patient complained of swelling and persistent, aching pain in the phalangeal and metacarpophalangeal joints of both hands and in the joints of both ankles. Examination revealed a pitting type of edema, local warmth, tenderness and painful motion of the affected joints; the pulse rate and temperature were slightly elevated.

Treatment hypodermically with epinephrine hydrochloride 1:1,000 solution was followed by a sharp decrease in the generalized pruritus and mild blanching of the erythematous areas, but the relief was only transitory. In administering this drug it was noted at the time that there was little relief or disturbance from the use of the tablet form of epinephrine, which apparently had deteriorated, whereas injection of the epinephrine hydrochloride solution not only relieved the symptoms of the reaction but also caused appreciable precordial distress and increased nervousness, including hand tremors. Substitution of epinephrine hydrochloride in peanut oil gave much more satisfactory and prolonged relief.

Urticaria persisted for three days, but the swelling and soreness of the hands and ankles did not disappear until the seventh day of the reaction; on this day an exfoliative type of dermatitis appeared on the palms of both hands, lasting three additional days.

CASE 2.—A white soldier aged 23 was admitted to this hospital as an overseas evacuee from the European theater for further treatment of a compound fracture of the right elbow sustained when the bomber in which he was flying was struck on April 2, 1945 by fragmentation bombs accidentally released by an American plane overhead. After initial treatment overseas in which he received 2 million units of penicillin he was evacuated to the United States for further care. A resection of the right elbow joint was performed on Oct. 23, 1945 under gas-ether-oxygen anesthesia, following which penicillin was administered, a routine measure after surgery on previously compounded fractures. He received 25,000 units every three hours intramuscularly for nine days, during which time his temperature and pulse remained within normal limits.

Two days after the cessation of this course of penicillin, while at home on a week-end pass, he noted a small patch of hives, first on the left arm but soon followed by extension to the other arm and to the trunk, face and back. Within a few hours he noted pains in the joints in both hands and both feet. The following day there was fleeting pain in both knees, not severe; the pain in the left hand had subsided somewhat. He returned to the hospital, at which time examination revealed generalized urticaria and decided swelling of the fingers of the right hand, including the metacarpophalangeal joints; there was also swelling of the toes and metatarsophalangeal joints of both feet, more pronounced on the right.

The accompanying picture was taken on the third day when the lesions were most intense; however, the patient had received 0.5 cc. of epinephrine hydrochloride a half-hour before, reducing the size of the wheals and edema.

Symptoms persisted for three days in an intense form despite the use of epinephrine hydrochloride; during this time there was pronounced edema with almost complete closure of both eyes. The edema of the right foot persisted for several days after other symptoms had subsided; a similar condition persisted in the right hand, but the recent surgical intervention in the right elbow clouded the mechanism of its production. Five days after the onset of the reaction all swelling of the toes and fingers had entirely cleared and the urticaria had not reappeared; however, an exfoliative dermatitis of both palms had appeared on the third day, and this was still present along with a mild, generalized pruritus. No signs or symptoms were present by the eighth day of the reaction.

9. Sullens, W. E., Jr.: Simulating Serum Sickness Reaction to Penicillin, U. S. Nav. M. Bull. **45**: 752 (Oct.) 1945.
10. Macey, H. B., and Hays, T. G.: Allergic Reactions to Penicillin Therapy, U. S. Nav. M. Bull. **45**: 1143 (Dec.) 1945.
11. Gordon, E. J.: Serum Sickness Reaction to Penicillin: A Case Report, M. Bull. Mediterranean Theat. Op. **3**: 123 (April) 1945.

On questioning, the patient gave no history of asthma, hay fever or other allergies either in himself or in his family. The only other course of penicillin he had received was that given immediately after his injury.

CASE 3.—A girl aged 20, a member of the Women's Army Corps, was readmitted to the hospital in the dermatologic service with severe generalized urticaria which involved all the extremities and the trunk but not the face and was of obscure etiology. She stated that she had been discharged from the hospital seven days before, after having been hospitalized ten days for acute follicular tonsillitis. During her previous hospitalization she had received a course of penicillin therapy of 25,000 units every three hours, administered intramuscularly, for a total of 1,600,000 units.

While at home seven days after the last injection of penicillin she first noted a severe urticaria of her trunk, rapidly followed by extension to all four extremities. It increased in severity despite the use of ephedrine sulfate. The following day she noted aching pain in both knees and ankles, accompanied by mild swelling. She returned to the hospital, where a careful search for possible allergic sensitivities was made, including multiple scratch and intradermal tests. The history of recent penicillin therapy was disregarded.

The urticaria cleared three days after its onset, but the pains in the joints persisted in a mild form for an additional week. Seven days after the onset an exfoliative dermatitis of the palms of both hands appeared, and this persisted one week. Ten days after the onset the reaction had subsided except for the slight persistence of mild pain in the joints in both knees and mild exfoliation of both palms.

The patient gave no history of previous allergy, either personal or within the family. She had never received any penicillin before.

COMMENT

In these 3 cases there have been certain similarities in the manifestation of the reaction attributed to penicillin. In each case the appearance of the reaction was delayed several days, varying from two to seven, following cessation of penicillin therapy. The first appearance in each was an intense urticaria with severe pruritus and wheal formation, appearing on one portion of the body, either the trunk or the extremities, but rapidly extending to involve most of the remaining cutaneous area. In 2 of the 3 cases there was edema of both eyelids, causing almost complete closure. Secondly, pain in the joints accompanied by swelling, tenderness, local warmth and painful function were manifested in each case. Malaise with mild fever and tachycardia were also present at this time. A third feature which was present in all 3 cases in the latter stages of the reaction was an exfoliative dermatitis of both palms; whether or not this was coincidental or an integral part of the reaction could not be determined, but it was present and was the last manifestation to disappear in each case.

The urticaria responded to treatment with epinephrine hydrochloride administered hypodermically, but it recurred repeatedly and ran a course of approximately seventy-two hours.

None of the 3 patients had had any previous manifestations of allergy in any form, nor were there any other agents to which the urticaria could be attributed.

The characteristic features of this type of reaction appear to be (1) delayed appearance following the cessation of penicillin therapy, (2) intense, severe urticaria, rapidly extending to become generalized, (3) multiple involvement of the joints, large and small, with serous effusion and intense arthralgia, (4) severe malaise, mild fever and mild to moderate tachycardia, (5) exfoliative dermatitis of both palms in the terminal stages as the urticaria fades and (6) a self-limited course of seven to ten days irrespective of the therapy employed.

Such a composite picture strongly resembles that of serum sickness of the type usually associated with delayed reactions to biologic products such as liver extract, insulin and posterior pituitary injection.

ETIOLOGIC CONSIDERATIONS

The mechanism of the production of delayed reactions to penicillin is still a subject of investigation.

Barker [7] and Lyons [8] believed that untoward reactions were due to impurities in the preparation of the drug rather than to the active penicillin fraction; the latter investigator found such impurities to constitute 80 to 90 per cent of the final product (in 1943) and to vary from batch to batch even in the hands of a single producer. This percentage has since been greatly reduced as the manufacturers have developed finer processes of culture and extraction which, as at present utilized, result in a content of penicillin varying between 20 and 40 per cent. The remaining material consists of extractives soluble in organic solvents, which occasionally produce urticaria and vary in different batches.

The tendency to ascribe reactions to impurities in the preparation and not to the penicillin fraction itself is further observed in the usual current practice of changing to another manufacturer's brands when a reaction occurs with the product of one.

Although undoubtedly there has been good reason to believe that some of the reactions have been a direct result of toxic impurities, evidence is rapidly accumulating to prove that penicillin in itself is a sensitizing agent capable of producing an allergic state in susceptible individuals.

Pyle and Rattner [12] found no reaction from patch tests with the medium (corn steep liquor and lactose) but strongly positive tests with the whole product and slightly positive reactions with the crystalline product, the purest penicillin available. They concluded that the dermatitis was due to the penicillin itself and not to the medium as proposed by Barker and Lyons.

Criep [6] performed several immunologic studies on his patient. Direct cutaneous tests showed the patient to be hypersensitive to penicillin even in dilute concentrations where controls gave no reactions. Using the patient's serum, passive transfer tests yielded a positive reaction with penicillin in 1:1,000 dilution, controls being negative; however, Criep could not demonstrate anaphylactic antibodies to penicillin in the patient's serum. It was his opinion that there was evidence of the presence of some immune substances in the serum of his patient, such as reagins and precipitins, as proved by the positive direct skin test and positive passive transfer and precipitin tests, but he believed that their exact role was unknown. He concluded that the sensitivity was to penicillin and not to the medium, being an allergy similar to that to serums and drugs.

Another factor in this apparently allergic phenomenon is the part possibly played by sensitization by previous fungous infection, such as tinea. The prevalence of "athlete's foot" among such a large proportion of the population could easily account for almost universal sensitization to fungous antigens. In both of the cases reported by Graves, Carpenter and Unangst [13] there were histories of fungous infection and sensitivity to trichophytin. In both cases there were recurrent vesicu-

12. Pyle, H. D., and Rattner, H.: Contact Dermatitis from Penicillin, J. A. M. A. **125**: 903 (July 29) 1944.
13. Graves, W. N.; Carpenter, C. C., and Unangst, R. W.: Recurrent Vesicular Eruptions Appearing During Administration of Penicillin, Arch. Dermat. & Syph. **50**: 6 (July) 1944.

lar eruptions occurring three and twenty-four hours after the first dose of penicillin.

Using the Schultz-Dale technic in sensitized guinea pigs, Jadassohn (quoted by Graves, Carpenter and Unangst) proved that pathogenic fungi contain a specific antigen as well as another antigen common to all of them. Could allergic reactions to penicillin, which is produced from a fungus, be attributed to such a fungus-antigen relationship? There is considerable doubt at present.

Some of the most interesting and revealing laboratory studies on the sensitizing properties of penicillin were performed by McClosky and Smith,[14] using two series of guinea pigs, both sensitized by daily subcutaneous and intraperitoneal injections of penicillin over a five day period. One group was used for intracardiac or intravenous injection of antigen after an adequate incubation period, the other for tests on the isolated uterus by the Schultz-Dale technic. Some of the animals in each group were also sensitized to horse serum to ascertain the extent of the anaphylactic state developed in the animals in the event the reactions to penicillin were negative. Sensitization was not uniform and was usually atypical. The positive reactions were also mostly atypical in that reactions (such as uterine response) were often delayed and desensitization was often ineffective. This led to the opinion that the antibody-antigen combinations of commercial penicillin lack permanence and are more readily reversible than is the case in anaphylactic reactions following sensitization with true proteins.

They concluded that anaphylactic sensitization in the susceptible guinea pig can be achieved with penicillin as it is currently prepared and marketed. They used penicillin consisting of several commercial lots of the sodium salt manufactured by five different distributors, of the same degree of purity as that used in the clinic. They could not state to what extent impurities alone were responsible; if responsible, then the impurities were inherent in the commercial products, in which they were inseparable from the active substance. It was suggested that parallel experiments with synthetic penicillin, when available, would provide the answer.

From this excellent laboratory study we have direct evidence that penicillin is capable of anaphylactic sensitization. Unfortunately there have been few clinical studies in this direction, possibly owing to the present relative infrequency of reactions to penicillin. It is suggested that one might attempt desensitization to penicillin when a reaction is encountered and the use of the drug is imperative, in the same manner as that performed for tetanus antitoxin and gas gangrene antitoxin.

Although, admittedly, corroborative experimental evidence is not yet conclusive, it is my opinion that reactions to penicillin should be regarded as the manifestation of a sensitizing substance with allergic potency and should not be merely attributed to toxic impurities resulting from the commercial preparation of the drug. The problem should not be regarded as merely a matter of switching brands, but it should be approached in the same manner in which one would approach any other allergic condition. The advent of penicillin in synthetic form will undoubtedly lead to further investigation and clarification of the present nebulous etiology of reactions to penicillin.

14. McClosky, W. T., and Smith, M. I.: Experiments on the Sensitizing Properties of Penicillin, Proc. Soc. Exper. Biol. & Med. **57**: 270 (Nov.) 1944.

SUMMARY AND CONCLUSIONS

A search of the literature revealed several reported cases of delayed reactions to penicillin of the type of urticaria and serum sickness.

The incidence of delayed, serum sickness reaction to penicillin is low; although exact statistics are not available, the incidence is probably no greater than 1 : 1,500 or 1 : 2,000 cases of penicillin therapy.

The characteristic features in 3 cases were (1) delay in appearance, (2) severe malaise, mild fever and moderately rapid pulse, (3) severe, intense spreading urticaria, (4) arthralgia with serous effusions of the joints, (5) exfoliative dermatitis of the palms of both hands, and (6) a self-limited course of seven to ten days regardless of the treatment used.

Both the preponderance of opinion and the laboratory studies point to an anaphylactic sensitization by the penicillin fraction itself in susceptible individuals, with a resultant true allergic manifestation such as is found with sensitization to true proteins as the cause.

The diagnosis of urticaria of obscure origin should always include the possibility of origin from a recently completed course of penicillin therapy.

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FATAL ANAPHYLACTIC SHOCK

Occurrence in Identical Twins Following Second Injection of Diphtheria Toxoid and Pertussis Antigen

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Deaths related to the injection of foreign protein in man are fortunately few. The exact number of such occurrences is difficult to estimate from the available literature. By 1942 Kojis [1] was able to find 61 such deaths, and he added 4 more from the Willard Parker Hospital. The most complete and most recent study of necropsies was made by Vance and Strassmann,[2] who added 7 autopsy studies from the Office of the Chief Medical Examiner to 19 taken from the literature. Park [3] in 1932 recorded the mortality from serum anaphylaxis as 0.002 per cent. Kojis [1] in 1942 found it to be just under 0.1 per cent in a series of 6,211 subjects treated for various infections. Rutstein and his associates,[4] in their analysis of pneumonia cases treated with antipneumococcus horse serum, found the mortality to be 0.45 per cent. In only 1 or possibly 2 of the 25 deaths did they assign significance to protein hypersensitivity as a cause. They state that all these persons who died had vascular collapse, that only 2 had asthmatic breathing and that only 1 had hives. No characteristic change was noted in the 7 who came to autopsy other than the primary pneumonia from which all the patients suffered at the time of receiving the serum.

The inadequacy of our present knowledge of the mechanism in deaths following the administration of

The photomicrographs were taken by Mr. Julius Weber.

Read in part before the New York Pathological Society, Dec. 27, 1945.
From the Office of the Chief Medical Examiner, City of New York, and the Pathology Department of St. John's Long Island City Hospital.

1. Kojis, F. G.: Serum Sickness and Anaphylaxis: Analysis of Cases of 6,211 Patients Treated with Horse Serum for Various Infections, Am. J. Dis. Child. **64**: 93 (July); 313, (Aug.) 1942.
2. Vance, B. M., and Strassmann, G.: Sudden Death Following Injection of Foreign Protein, Arch. Path. **34**: 849 (Nov.) 1942.
3. Park, W. H.: Deleterious Effects from Serum Injections, Am. J. Pub. Health **18**: 354 (March) 1928.
4. Rutstein, D. D.; Reed, E. A.; Langmuir, A. D., and Rogers, E. S.: Immediate Serum Reactions in Man, Arch. Int. Med. **68**: 25 (July) 1941.

foreign protein is evident from Kojis's[1] summary of the 24 necropsies among the 61 he found in the literature. "3 . . . showed nothing; 6, only an enlarged thymus; 1, subacute nephritis; 1, a dilated left ventricle, congested kidneys and a slightly enlarged and pulpy spleen; 7, the guinea pig type of anaphylactic death; 3, the canine type; 1, the rabbit type; 1, a combination of the guinea pig and rabbit type; and 1, a combination of the guinea pig and canine types." It is evident that the interpretation of some published cases must remain in doubt because of the absence or incompleteness of pathologic study.

The cases reported as exhibiting harmful effects from the administration of foreign proteins fall into two groups: In one the reinjection of antigen appears to have induced the same state of susceptibility[5] as obtains in the experimental animal; in the other the development of sensitivity is considered spontaneous because it is unassociated with a history of prior parenteral injection.

Coca and Cooke[6] considered the mechanism of natural sensitivity in atopic individuals as separate from the one which underlies experimental anaphylaxis. Ratner and Gruehl[7] believed that the demonstration of transferable reagin in the blood of asthmatic persons and guinea pigs made such a distinction untenable. The possibility that some naturally sensitive individuals may have had previous contact with an antigen subsequently found capable of producing shock was suggested by the successful sensitization of guinea pigs to inhaled horse dander.[8] Of the 65 cases summarized in Kojis's[1] review 16 gave a history of asthma or chronic respiratory disease, and 17 had injections from one day to ten years previously. Vance and Strassmann[2] noted a striking resemblance between the asthmatic and the presumably nonasthmatic patients. There was similarly no fundamental difference either in clinical symptomatology or in pathologic findings in those who had no history of prior parenteral injection.

Although the symptoms and lesions of anaphylaxis are constant for a given animal species[9] irrespective of the antigen, available information discloses no such uniformity in the human being. Conditions that surround the clinical occurrence of hypersensitive states in contrast with the experimental are far from standard. Among the variables that explain the wide differences in the allergic responses observed clinically are dosage, route of absorption, period in the development of sensitivity, concurrent disease and individual predisposition. Dependent on these various conditions and on the site of antigen antibody reaction we may see[10] the Arthus phenomenon, urticaria, eczema, asthma, hay fever, serum sickness, periarteritis nodosa, food or drug idiosyncrasy, the "tuberculin type" of reaction to microorganisms and their products, and sudden collapse and death.

With the increasing use of immunotherapy, it is important that serious reactions be made known. Where death has occurred, the postmortem investigation should consider (1) the possible primary toxicity of the product in the dosage used, (2) possible contamination of injection materials, (3) symptomatology and pathologic findings, with special attention to the role of associated disease, and (4) possible demonstration of passively transferable reagin.[11]

REPORT OF CASES

On June 19, 1945, the death of identical[12] twins after a second injection of diphtheria toxoid and pertussis antigen, alum precipitated,[13] was reported for investigation.

History.—D. M. and G. M., boys aged 10 months, were brought to St. John's Long Island City Hospital (service of Dr. James M. Dobbins) on June 19, 1945 at 7:15 a. m. D. M. was pronounced dead on arrival; the condition of G. M. was described as critical. He was cyanotic and dyspneic; respirations were shallow, rapid and labored. Oxygen was given by mask; suction was applied for aspiration of mucus; 4 cc. of nikethamide was given at 8 a. m., 3 minims (0.18 cc.) of epinephrine at 8:15 and 2 cc. of caffeine with sodium benzoate at 8:45. At this time the temperature was 99 F. Cyanosis continued to be present at intervals. One cc. of

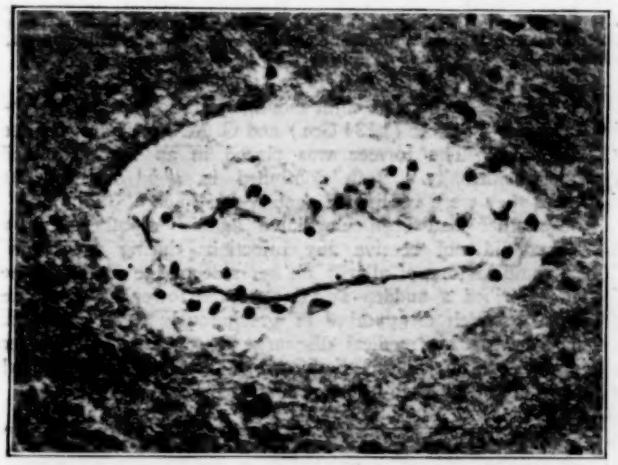

Fig. 1 (D. M.).—Section of brain showing fibrin clot in vein, perivascular edema and cellular infiltrate. Hematoxylin and eosin. Slightly reduced from a photomicrograph with a magnification of 300 diameters.

picrotoxin was given at 9:30; respirations were then noted as being 38. At 10 and 10:30 3 more minims of epinephrine were given, and at 10:45 infusion of plasma was begun. Before 40 cc. was given the subject was pronounced dead.

The family physician stated that nothing untoward was noticed immediately after the injections except that 1 twin bled slightly from the site, necessitating the application of an additional cotton pledget. The parents stated that following the first injections one month before (from another ampule of the same product) D. M. vomited, had a temperature of 101 F. and cried considerably. One-half grain (0.032 Gm.) of acetylsalicylic acid was given and by evening he was apparently well. G. M. remained symptom free after the first injection.

After the second immunizing injections, both infants cried considerably on reaching home; they vomited and consumed excessive amounts of water, each taking about two full bottles. They then "fell asleep" and when next noticed by their parents appeared "lifeless." Their position in the cribs remained unchanged, and they could be aroused only by loud noises. D. M. had a "staring" expression; his temperature was 99 F.

5. Longcope, W. T.: Susceptibility of Man to Foreign Proteins, Am. J. M. Sc. **152**: 625 (Nov.) 1916.
6. Coca, A. F., and Cooke, R. A.: Classification of Phenomena of Hypersensitiveness, J. Immunol. **8**: 163 (May) 1923.
7. Ratner, B., and Gruehl, H. L.: Identity of Animal Anaphylaxis and Human Allergy (Protein Hypersensitiveness), Proc. Soc. Exper. Biol. & Med. **27**: 574 (March) 1930.
8. Ratner, B.; Jackson, H. C., and Gruehl, H. L.: Anaphylactogenic Character of Horse Dander and Its Crossed Relationship to Horse Serum, Proc. Soc. Exper. Biol. & Med. **23**: 46 (Oct.) 1925.
9. Doerr, R.: Allergie und Anaphylaxis, in Kolle, W.; Kraus, R., and Uhlenuth, P.: Handbuch der pathog. Mikroorganismen, Jena, Gustav Fischer, 1929, vol. 1, p. 759.
10. Rich, A. R.: The Different Forms of Hypersensitivity to Foreign Protein, in the Pathogenesis of Tuberculosis, Springfield, Ill., Charles C Thomas, Publisher, 1944, p. 330.
11. Lund, H., and Hunt, E. L.: Postmortem Diagnosis of Allergic Shock, Arch. Path. **32**: 664 (Oct.) 1941.
12. The physician in attendance at their birth stated that they had a common placenta.
13. The product of a reliable pharmaceutical manufacturing company whose name is withheld.

At 11:30 p. m., when his diaper was changed, he was found to be "ice cold and wringing wet with perspiration." The parents explained that they regarded these symptoms as expected effects of the injections and therefore did not summon medical aid until 5:30 a. m., when D. M. appeared to be dead and G. M. gravely ill.

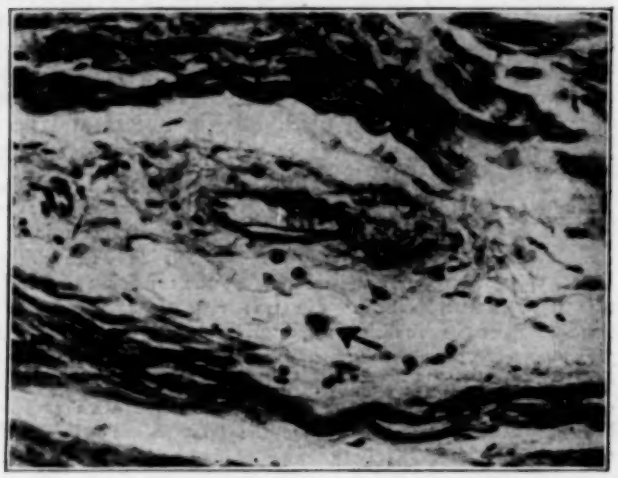

Fig. 2 (D. M.).—Section of heart showing paravascular mononuclear cellular infiltration. Note the binucleated cell. Hematoxylin and eosin. Slightly reduced from a photomicrograph with a magnification of 275 diameters.

The twins were born at eight months gestation, D. M. weighing 2 pounds 8 ounces (1,134 Gm.) and G. M. 5 pounds 4 ounces (2,381 Gm.). The former was placed in an incubator and developed normally. Both continued in good health. At 6 months they were vaccinated against smallpox.

The mother had been inoculated against diphtheria as a child but did not receive any injections during pregnancy. There is no history of allergy on her side of the family. The father described a sudden swelling of the lower lip while in the Army, which disappeared as precipitously as it came on. After receiving his medical discharge he experienced another similar episode, which was diagnosed as "allergic" by a medical officer who happened to be present at the time.

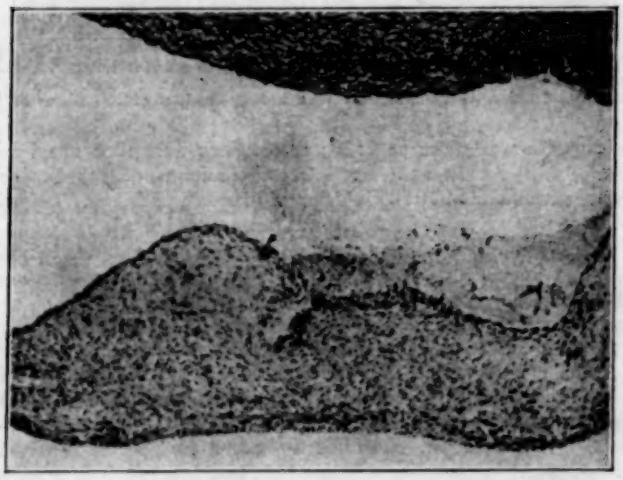

Fig. 3 (D. M.).—Section of aortic valve showing endothelial swelling and increased cellularity of leaflet. Hematoxylin and eosin. Slightly reduced from a photomicrograph with a magnification of 60 diameters.

Postmortem Study.—At autopsy both twins [14] were well nourished and well developed. The sites of recent inoculation in the deltoid region were marked by minute puncture wounds of the skin and a small amount of hemorrhage in the underlying fat. There was no gross evidence of significant inflammatory reaction. The brain in each case felt softer than usual. The subarachnoid space contained excess fluid. The meninges, mastoids, middle ears and tonsils showed no evidence of infection. There was no regurgitation or aspiration of stomach contents. The thymus of D. M. weighed 28.4 Gm. and showed numerous petechiae; that of G. M. weighed 34.1 Gm. The adrenals of D. M. weighed 3.0 Gm. and those of G. M. 3.2 Gm.; they showed no gross abnormalities. The heart contained both clotted and fluid blood in each instance. There were epicardial and pleural petechiae. The lungs were salmon pink and air containing for the most part. In G. M. the parenchyma on section showed edema; in D. M. there were conspicuous focal hemorrhages in the dependent portions. The mucosa of the larynx, trachea and bronchi was pale and free of exudate. The bronchopulmonary lymph nodes were not enlarged. The liver of D. M. weighed 350 Gm., that of G. M. 370 Gm. In D. M. it showed extreme congestion. The spleen and kidneys were moderately congested. The gastrointestinal tract showed no gross lesions. The lymphatic follicles were normally conspicuous, as were the mesenteric nodes. The pancreas, biliary passages and genital organs were natural. There were no skeletal abnormalities. Postmortem lung cultures were made and found sterile in each instance, and in addition a sterile postmortem culture was obtained from the spleen of D. M.

Postmortem serum was tested on four members of the laboratory staff for the presence of reagin after the prior intracutaneous injection of the biologic product, with negative results.[15] This contrasts with the success of Lund and Hunt [11] in eliciting a Prausnitz-Kustner reaction for the first time with postmortem serum. It is noteworthy in this connection that negative reaction to passive transfer was also recorded by Walzer [16] in a case of shock following injection of horse serum. The attempt [17] to effect passive transfer from postmortem serum in these cases to guinea pigs was also unsuccessful.

Fig. 4 (G. M.).—Section of cardiac papillary muscle showing necrosis and hemorrhage. Hematoxylin and eosin. Slightly reduced from a photomicrograph with a magnification of 80 diameters.

The contents of the vial used in immunizing the twins, and of the vials bearing the same lot number submitted by the manufacturer, were examined by Dr. Jules Freund of the Bureau of Laboratories, Department of Health, City of New York, and the following results were obtained: "The vaccine was found to be sterile; that is, the sterility test required by the National Institute of Health for biological products was satisfactory. The microscopic picture showed formed elements of the size and shape and staining qualities of Bordet-Gengou bacilli. Tests carried out on the skin of rabbits showed that there was no free diphtheria toxin in the vaccine. The identity test showed that the vaccine contained diphtheria toxoid, that is, combined with the diphtheria antitoxin, 0.5 cc. amounts of the vaccine injected into the peritoneal cavities of white mice

14. Unless otherwise stated, the pathologic descriptions apply to both subjects.

15. Dr. Bret Ratner examined the sites of injection in the 4 volunteers.
16. Walzer, M.: New Diagnostic Methods in Asthma, Long Island M. J. 60:85, 1932.
17. Dr. Jules Freund, Bureau of Laboratories, City of New York.

did not cause obvious toxic reactions. (The latter test is routinely done on biologicals for harmlessness.)"

The histopathologic study disclosed lesions consistent with death in anaphylactic shock. The skin at the site of inoculation (studied in G. M.) showed swelling and acute degeneration of collagen, arteriolar degenerative changes, thrombosis and hemorrhage. Bacterial stains showed numerous forms resembling Hemophilus pertussis. The follicles of the spleen, lymph nodes and gastrointestinal tract showed conspicuous macrophages containing abundant nuclear particles and cytoplasmic débris. There were numerous eosinophils in the lymphatic tissues. The thymus showed foci of hemorrhage and necrosis, and extremely constricted arteries whose walls showed edema, eosinophilia and endothelial swelling and proliferation.

The brain showed capillovenous engorgement, perivascular hemorrhages, arteriolar narrowing and diffuse degenerative changes of some arterial walls, with cellular infiltration of the vessels and the surrounding space; this was mainly mononuclear, with occasional polymorphonuclears and eosinophils. Many nerve cells showed acute degenerative changes.

Heart sections showed focal necrosis of muscle, more accentuated beneath the epicardium and endocardium. Constricted lumens, edema and necrosis of some arterial walls were observed, as were swelling and some proliferation of the endothelium. Perivascular hemorrhages were frequent in relation to such

Fig. 5 (D. M.).—Hilus of lung, showing macrophagocytic activity in lymph follicles, constricted artery, dilated veins and interstitial edema. Hematoxylin and eosin. Slightly reduced from a photograph with a magnification of 60 diameters.

areas. Sections of aortic and mitral cusps showed endothelial swelling and increased mononuclear cells throughout the leaflets.

The respiratory epithelium showed excellent preservation with intact cilia. (Fulminating respiratory infection, the most common cause of unexpected death during infancy, was thereby excluded.[18]) Extreme narrowing of some bronchial and many arterial and arteriolar lumens was conspicuous. Mononuclear, slight polynuclear and slight eosinophilic infiltration occurred in both bronchial and pulmonary arterial walls. The pulmonary veins and alveolar septal capillaries were deeply engorged. The lymphatics were dilated with abundant protein precipitate. There were foci of pulmonary edema, both interstitial and intra-alveolar, and foci of hemorrhage and early intra-alveolar exudate, mainly polymorphonuclear, especially in the case of D. M. Fibrinous exudate and bacteria were not seen.

The liver sections showed extensive parenchymatous degeneration, most evident in the central two thirds of the lobule; this took the form of granular and hydropic change, with pyknosis of nuclei and chromatolysis. The sinusoids contained abundant leukocytes, with a moderate number of eosinophils. Occasional focal necrosis was seen, mononuclears filling the parenchymatous defect; some multinucleated hepatic cells occurred in peripheral portions of some lobules.

18. Werne, J.: Postmortem Evidence of Acute Infection in Unexpected Death in Infancy, Am. J. Path. **18**: 759 (July) 1942. Werne, J., and Garrow, I.: Sudden Deaths in Infancy, Bull. New York Acad. Med. **21**: 445 (Aug.) 1945.

COMMENT

The widespread visceral lesions encountered seem adequate to explain the profound shock observed clinically. The histological appearances point to acute vascular injury as the underlying cause. This results from the basic physiological disturbances that seem

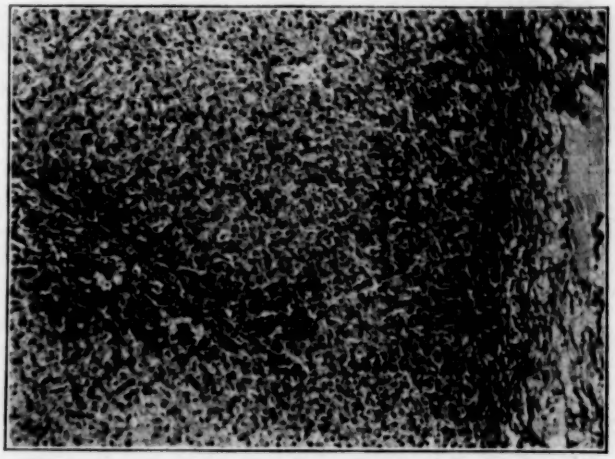

Fig. 6 (D. M.).—Section of liver showing parenchymatous degeneration, increased leukocytes in sinusoids and capsular edema. Note multinucleated hepatic cells. Hematoxylin and eosin. Slightly reduced from a photomicrograph with a magnification of 60 diameters.

adequate to explain the apparently diverse manifestations of the anaphylactic state: contraction of smooth muscle and increased capillary permeability.[19] The former, if severe enough in bronchiolar or pulmonary arteriolar muscle, is believed to cause death by asphyxia or dilatation of the right ventricle, as in the guinea pig [20] and the rabbit [21] respectively.

In 14 of the 19 autopsies taken from the literature and in the 7 they added, Vance and Strassmann [2] noted either a clinical history of dyspnea or the postmortem

Fig. 7 (D. M.).—Section of thymus showing constriction of artery, hemorrhage and necrosis. Reticulum stain. Slightly reduced from a photomicrograph with a magnification of 40 diameters.

finding of emphysema. This they interpreted as indicating asphyxial death by bronchospasm. In the cases

19. Seegal, B. C., in Gay, F. P.: Agents of Disease and Host Resistance, Springfield, Ill., Charles C Thomas, Publisher, 1935, chap. 6.

20. Gay, F. P., and Southard, E. E.: Further Studies on Anaphylaxis: III. The Relative Specificity of Anaphylaxis, J. M. Research **19**: 5, 1908. Auer, J., and Lewis, P. A.: The Pathology of the Immediate Reaction of Anaphylaxis in the Guinea Pig, J. Exper. Med. **12**: 151, 1910.

21. Coca, A. F.: The Mechanism of the Anaphylaxis Reaction in the Rabbit, J. Immunol. **4**: 219 (July) 1919. Drinker, C. K., and Bronfenbrenner, J.: Pulmonary Circulation in Anaphylactic Shock, ibid. **9**: 387 (Sept.) 1924.

reported here there was neither clinical nor pathologic evidence for significant bronchial obstruction as a cause of death. Increased capillary permeability, as emphasized by Manwaring and his associates [22] and by Moon,[23] among others, may lead to reversible shock, protracted shock or instantaneous death. Collapse

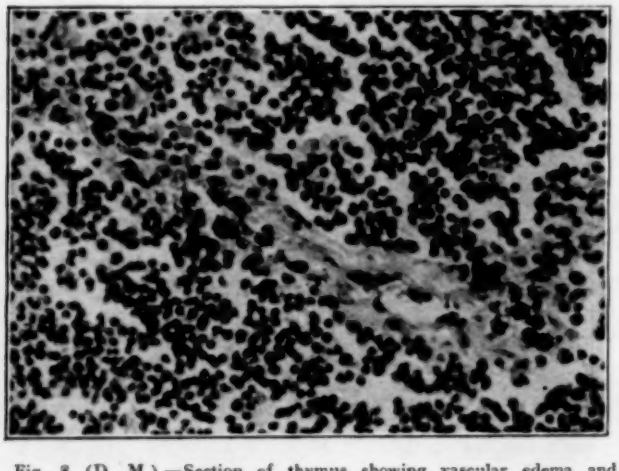

Fig. 8 (D. M.).—Section of thymus showing vascular edema and eosinophilia. Giemsa stain. Slightly reduced from a photomicrograph with a magnification of 300 diameters.

referable to this widespread vascular disturbance is the usual expression of anaphylaxis in the dog and was the conspicuous feature in the cases presented here. With respect to the clinical appearance of shock, rather than respiratory difficulty, as with respect to some of the visceral lesions, particularly the hepatic, these cases recall the one reported by Dean,[24] in which death occurred seventy minutes after the fourth injection of tetanus antitoxin.

The morphologic appearances are in accord with the direct observations of Abell and Schenck [25] in shocked

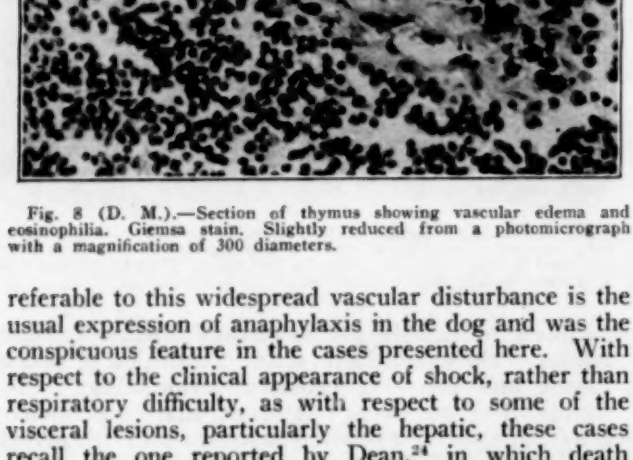

Fig. 9 (G. M.).—Section of heart showing constriction of arterioles and focal hemorrhage. Hematoxylin and eosin. Slightly reduced from a photomicrograph with a magnification of 150 diameters.

rabbits. They describe arteriolar contraction with obliteration of lumens and margination and migration of leukocytes, which formed obstructive clumps, thereby stopping circulation. Endothelial destruction with hemorrhage was seen in the most severe reactions. McMaster [26] similarly observed vascular spasm as a local effect of the introduction of antigen in a previously sensitized mouse. Arteriolar spasm has been emphasized by Ratner [27] as explaining the characteristic allergic phenomenon of wheal formation.

The sixteen and twenty hour intervals elapsing between the shocking injection and death in the cases reported here contrast with the short interval in the majority of recorded instances. In the 26 necropsies reviewed by Vance and Strassmann [2] only 5 of the patients lived from one to twenty-three hours.

Waldbott [28] reported 3 cases of allergic shock in which the acute symptoms were followed by signs of bronchopneumonia. Recovery occurred in 2. The third showed at autopsy congestion and edema of cerebral and meningeal blood vessels, few cerebellar petechiae, areas of solidification in both lungs, congestion and emphysema; on microscopic study, patchy bronchopneumonia, massive intra-alveolar hemorrhage and edema; necrosis of alveolar epithelium, and emphysema were noted. In this case dyspnea, cough and

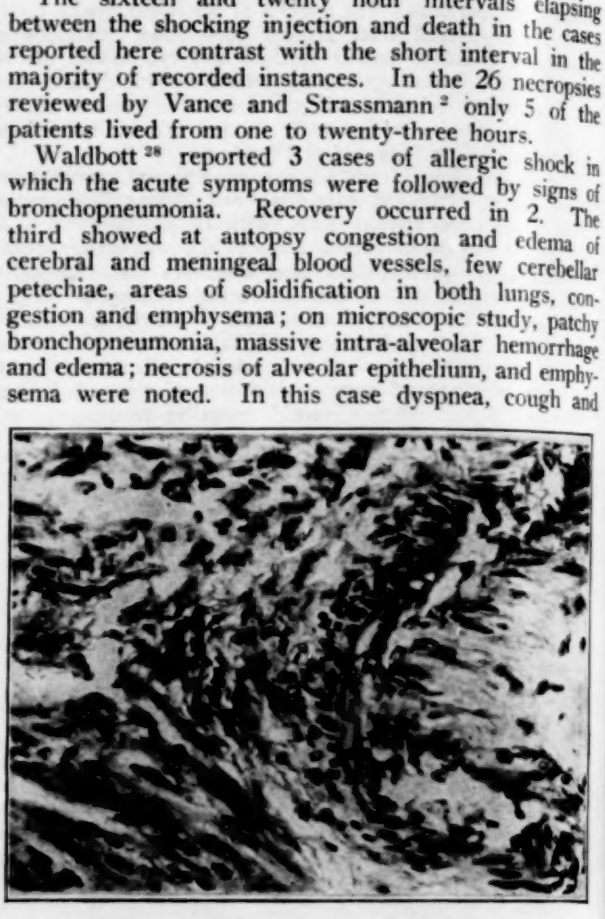

Fig. 10 (D. M.).—Section of heart showing extreme narrowing and edema of arteriole. Hematoxylin and eosin. Slightly reduced from a photomicrograph with a magnification of 300 diameters.

unconsciousness had developed four hours after the intravenous injection of typhoid vaccine, and death occurred on the third day. The possibility of delayed reaction should be considered whenever foreign protein is administered. Prompt recognition of untoward signs may avert a fatal outcome. Successful treatment of anaphylactic shock was reported by Blotner [29] with saline solution and by Raynolds [30] with plasma. These important aids in the management of shock should therefore be routinely employed, in addition to such routine therapy as epinephrine.

In view of the high mortality that accompanies both diphtheria and pertussis during infancy, it is hoped that the publication of a report of these two fatalities will not deter the profession from continuing to practice immunization. It will be recalled that the family history was positive for allergy; the father suffered from what appeared to be episodes of angioneurotic edema.

22. Manwaring, W. H.; Chilcote, R. C., and Hosepian, V. M.: Capillary Permeability in Anaphylaxis, J. A. M. A. **80:** 303 (Feb. 3) 1923.
23. Moon, V. H.: Pathology and Mechanism of Anaphylaxis, Ann. Int. Med. **12:** 205 (Aug.) 1938.
24. Dean, H. R.: Histology of Case of Anaphylactic Shock, J. Path. & Bact. **25:** 305 (July) 1922.
25. Abell, R. G., and Schenck, H. P.: Microscopic Observations on Behavior of Living Blood Vessels of Rabbit During Reaction of Anaphylaxis, J. Immunol. **34:** 195 (March) 1938.
26. McMaster, P. D.: Peripheral Vascular Reactions in Anaphylactic Shock of the Mouse, Am. J. Path. **17:** 457 (May) 1941.
27. Ratner, B.: Allergy, Anaphylaxis and Immunotherapy, Baltimore, Williams & Wilkins Company, 1943, p. 632.
28. Waldbott, G. L.: Allergic Death: Protracted Shock, Arch. Int. Med. **54:** 597 (Oct.) 1934.
29. Blotner, H.: Anaphylactic Shock with Hemoconcentration Treated Intravenously with Saline Solution, J. A. M. A. **118:** 219 (Jan. 17) 1942.
30. Raynolds, A. H.: Plasma Treatment of Severe Near-Fatal Anaphylactic Shock, J. Allergy **14:** 495 (Sept.) 1943.

That heredity is dominant in the anaphylactic state has been emphasized by Ratner and his associates.[31] Landsteiner and Chase [32] and Chase [33] demonstrated experimentally the role of heredity in both local (cutaneous) and general hypersensitivity. Allergic manifestations in seven pairs of identical twins were reported by Criep.[34] It would seem that the influences of heredity and twinning deserve weight as determinants of individual predisposition in the cases reported here. A search of the literature disclosed no other fatalities following inoculation with pertussis antigen and diphtheria toxoid, whether separately or combined.

After being notified of the deaths, the manufacturer recalled the entire batch from which the biologic product had been dispensed. A search of all records of complaint was immediately instituted. To date no reports of serious reactions have been received, and all tests on the lot in question were found satisfactory.

Kendrick,[35] in a field study of alum-precipitated combined pertussis and diphtheria toxoid, found among records of local and general reactions in 900 children only a few that were described as pronounced. Of further interest in connection with the degree of possible hazard attached to some immunizations is the experience of Friedman,[36] who gave 109 allergic children tetanus and diphtheria toxoid without untoward reactions. Bigler and Werner [37] observed but 2 instances of allergic response in 300 children receiving tetanus toxoid or combined diphtheria and tetanus toxoids. Cooke and his associates [38] reported generalized urticaria following the second injection of tetanus toxoid in an asthmatic patient, and Cunningham [39] reported the occurrence of anaphylaxis following a second injection of toxoid in an adult who had previously had serum sickness. The first patient gave positive skin tests to Gerna and Witte peptone, and the second to Witte peptone; both recovered. Deaths following the intravenous injection of typhoid vaccine have been recorded.[40]

SUMMARY

Identical twins died in delayed anaphylactic shock. The widespread occurrence of lesions referable to arterial spasm and increased endothelial permeability contribute further evidence to the basic role of vascular injury in the hypersensitive state.[41]

31. Ratner, B.; Silberman, D. E., and Greenburgh, J. E.: Allergy in Childhood: Does Heredity Determine Age of Onset? J. Allergy **12**: 272 (March) 1941.
32. Landsteiner, K., and Chase, M. W.: Breeding Experiments in Reference to Drug Allergy in Animals, Proc. Internat. Cong. Microbiol., 1940, p. 772.
33. Chase, M. W.: Inheritance in Guinea Pigs of Susceptibility to Skin Sensitization with Simple Chemical Compounds, J. Exper. Med. **73**: 711 (June) 1941.
34. Criep, L. H.: Allergy in Identical Twins: Report of Seven Pairs of Twins, J. Allergy **13**: 591 (Sept.) 1942.
35. Kendrick, P. L.: Use of Alum-Treated Pertussis Vaccine and of Alum-Precipitated Combined Pertussis Vaccine and Diphtheria Toxoid for Active Immunization, Am. J. Pub. Health **32**: 615 (June) 1942.
36. Friedman, T. B.; Bigler, J. A., and Werner, M. A.: Immunologic Response of Allergic Children to Toxoid, J. Allergy **13**: 114 (Jan.) 1942.
37. Bigler, J. A., and Werner, M.: Active Immunization Against Tetanus and Diphtheria in Infants and Children, J. A. M. A. **116**: 2355 (May 24) 1941.
38. Cooke, R. A.; Hampton, S. F.; Sherman, W. B., and Stull, A.: Allergy Induced by Immunization with Tetanus Toxoid, J. A. M. A. **114**: 1854 (May 11) 1940.
39. Cunningham, A. A.: Anaphylaxis After Injection of Tetanus Toxoid, Brit. M. J. **2**: 522 (Oct. 19) 1940.
40. Death Following Antityphoid Vaccination, Queries and Minor Notes, J. A. M. A. **101**: 229 (July 15) 1933. Two Deaths After Intravenous Nonspecific Protein Therapy, Foreign Letters (Australia), ibid. **96**: 1161 (April 4) 1931. Two Deaths Following Administration of Typhoid Vaccine, Medical News, ibid. **89**: 801 (Sept. 3) 1927.
41. Opie, E. L.: Significance of Allergy in Disease, Medicine **15**: 489 (Feb.) 1936. Clark, E., and Kaplan, B. I.: Endocardial, Arterial and Other Mesenchymal Alterations Associated with Serum Disease in Man, Arch. Path. **24**: 458 (Oct.) 1937. Harkavy, J.: Vascular Allergy, Arch. Int. Med. **67**: 709 (April) 1941. Rich, A. R.: Role of Hypersensitivity in Periarteritis Nodosa as Indicated by Seven Cases Developing During Serum Sickness and Sulfonamide Therapy, Bull. Johns Hopkins Hosp. **71**: 123 (Sept.) 1942; Additional Evidence of Role of Hypersensitivity in Etiology of Periarteritis Nodosa: Another Case Associated with Sulfonamide Reaction, ibid. **71**: 375 (Dec.) 1942.

REMISSIONS IN THYROTOXICOSIS AFTER DISCONTINUING THIOURACIL

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and
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A review of the literature has failed to reveal information which might serve to evaluate thiouracil as a possible form of treatment for permanent cure of thyrotoxicosis. The main reason for this is that too few patients have been followed for a sufficiently long period to warrant definite conclusions. The drug is now released for general distribution, and most physicians have the impression that it has no other use than as a preoperative form of therapy. Since a review of our series of 80 patients treated with thiouracil for over two months revealed a very definite pattern of behavior, we considered that enough data were now at hand to justify a few important tentative conclusions that might be helpful as a guide in the treatment of thyrotoxicosis with this preparation.

REVIEW OF THE LITERATURE

Apparently Palmer [1] is the only author who has differentiated the nodular from the non-nodular toxic goiters when determining the effect of thiouracil in the production of a therapeutic remission in patients with thyrotoxicosis. It is our opinion that this differentiation is an important one, first because the nodular goiters respond less satisfactorily to thiouracil treatment, second because, although the toxic clinical manifestations of nodular goiters are more insidious, they possess less tendency to natural remissions, and third because of the recognized possibility that a certain number of adenomatous goiters will develop carcinoma. It was observed by Palmer [1] that all the 9 cases of thyrotoxicosis observed by her in which there was no evidence of a recurrence of the disease after the medication had been discontinued for six months were of the diffuse hyperplastic type. She also stated that thus far no patient with a nodular thyroid had experienced a remission of more than four months after treatment with thiouracil was discontinued. No other information concerning these patients was supplied.

Williams and Clute [2] reported 98 cases of thyrotoxicosis treated with the drug for more than four months. Thiouracil was administered continuously for more than a year in 10 of these, for more than eight months in 36 and for more than four months in 52. In only 5 was the administration of the drug discontinued and their subsequent course observed during the time when all therapeutic measures were omitted. One of these had been treated for six months and the rest for one year. One had remained normal for a period of six months and 4 for two to three months. Another patient experienced a relapse after two months. Other details, such as the type of goiter and the initial basal metabolic rate were not given. The 20 per cent relapse in this group was not of statistical significance. One other observation of theirs also coincided with the experience of others, namely that at least 2 patients who discontinued treatment of their own accord, on three

From the Department of Internal Medicine, University of Michigan.
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1. Palmer, M. Virginia: Hyperthyroidism and Thiouracil, Ann. Int. Med. **22**: 335 (March) 1945.
2. Williams, R. H., and Clute, H. M.: Thiouracil in the Treatment of Thyrotoxicosis, J. A. M. A. **128**: 65 (May 12) 1945.

separate occasions and after short periods of treatment, had recurrences in approximately one month or less.

The administration of thiouracil was discontinued in 18 of 51 cases reported by Astwood.[3] In 9 of these therapy had been given for only "relatively short periods." In 1, however, the treatment had been continued for as long as one hundred and fifty-one days. The symptoms in all patients recurred "promptly." In the other 9 cases, on the other hand, in which therapy had been continuous for periods of six and one-half to eight months, long continued remissions occurred. These patients had been followed, at the time of publication, for periods of from two to nine months. Here we again see the tendency to rapid relapse of the disease following short periods of treatment, as contrasted to much longer remissions following the administration of the drug over more prolonged periods.

Lastly, Barr and Schorr [4] have reported their results on 70 patients treated from two to twenty-one months. Their observations again indicate that a prompt recurrence of thyrotoxicosis will occur when the preceding period of treatment has been short, and more prolonged remissions will be noted when it has been more prolonged. Thus of 13 patients who had the administration of thiouracil discontinued after less than six months of treatment, 4 had relapses, whereas in only 11 of 48 patients treated for a longer period did recurrences develop. In these 11 the recorded interval between withdrawal and relapse varied between one and seventeen months, 6 relapses occurring after one month. The 77 per cent of the 48 patients who did not have relapses had been followed in 6 instances for an average of 6.1 months, while another 6 had been observed less than two months. The type of goiter and all the initial basal metabolic rates were not noted.

TABLE 1.—*Total Duration of Treatment with Thiouracil in Twenty-Nine Patients with Toxic Diffuse Goiter and Toxic Adenomatous Goiter*

Time Followed (in Months)	Number of Patients
18-21	6
16-18	2
12-14	3
9-12	10
6- 9	3
4- 6	5

In summarizing this brief review of the literature pertaining to remissions of thyrotoxicosis after treatment with thiouracil has been discontinued, we find that the information thus provided is inadequate in that (1) the number of patients is too small and they have been followed for too short a period of time to provide convincing information and (2) in the majority of the patients there is no statement concerning the type of goiter or the height of the initial basal metabolic rate.

It should be emphasized, however, that these studies have been of value, since they show that following a discontinuance of thiouracil (1) a recurrence of symptoms is apparent, almost always within a period of two months if the drug is given for only short periods, usually less than six months, (2) there is a tendency for such a therapeutically induced remission to continue throughout the period of subsequent observation if it persists for more than the critical interval of two months after the thiouracil is omitted and (3) of the patients treated adequately for more than six months 80 per cent have a remission lasting throughout the period of observation which has usually been longer than the critical two month period.

3. Astwood, E. B.: Thiouracil Treatment in Hyperthyroidism, J. Clin. Endocrinol. **4**: 229 (June) 1944.

4. Barr, D. P., and Schorr, E.: Observations on the Treatment of Grave's Disease with Thiouracil, Ann. Int. Med. **23**: 754 (Nov.) 1945.

CASE MATERIAL

Our series consists of 80 patients with thyrotoxicosis who were treated with thiouracil for more than two months. Eighty per cent of these patients have been given the drug initially while confined to the hospital under close observation. After discharge their subsequent course has been followed at one to three month intervals in the outpatient department with clinical observations and with determinations of the basal metabolic rate and the cholesterol content of the blood. While in the hospital the patients were at rest in bed and received only sedation and brewers' yeast until two determinations of the metabolic rate had been made over a period of five days. Thiouracil was then given in a dosage not exceeding 0.6 Gm. per day. The condition of each patient was then followed with weekly determinations of the basal metabolic rates and of the cholesterol content of the blood, and with leukocyte and differential white blood cell counts, which were performed every other day. When the basal metabolic rate reached approximately zero, the thiouracil dosage was reduced to 0.2 Gm. per day. If on the next return visit in two months the basal metabolic rate was below zero and the clinical picture coincided with this observation, the dosage was reduced to 0.1 Gm. per day. Furthermore, if on a subsequent visit two months or more later it was again below zero on this reduced dosage, administration of the drug was discontinued. In this way the clinical response of the patient served as an indication for the discontinuance of the medication. The patient was then observed in the same manner as he had been while receiving the drug in order to check the possibility of a recurrence.

Of the 80 patients studied in this manner 31, or 38.7 per cent, had nodular goiters. Twenty-four of the 80 patients have had a thyroidectomy. Of these patients in whom thyroidectomy was performed, 20 had nodular goiters and 4 non-nodular. Our policy is to operate on all patients with nodular goiters as a prophylactic measure against carcinoma of the thyroid. The 11 patients with nodular goiters who have not had a thyroidectomy done as yet are still being treated with thiouracil because operation was refused,[2] the patient's condition was unsatisfactory for operation or preparation for thyroidectomy is now in progress.

The 4 patients with non-nodular goiters who have been subjected to thyroidectomy, as mentioned, have had surgical treatment at their own request or because of complications associated with thiouracil administration.[5]

In our group of 80 patients there are 45 with toxic non-nodular goiters who have not had a thyroidectomy performed. It is in a study of these patients that we have a special interest because an attempt has been made in them to produce a permanent remission with thiouracil. It has been possible to follow 29 of these patients for more than four months since thiouracil therapy was instituted. Table 1 shows a chronological breakdown of this group.

Thirteen of the 29 patients have discontinued treatment with thiouracil either against our advice or with our consent. In general, our conclusions, based on

5. Beierwaltes, W. H., and Sturgis, C. C.: Complications Following the Administration of Thiouracil, Am. J. M. Sc., to be published.

our observation of these patients, are in accord with those noted in the review of the literature, namely that there is a tendency to rapid relapse of the disease after short periods of treatment, as contrasted to more persistent remissions following more prolonged administration of the drug. Thus we find in table 2 that 5, or 38 per cent, of the 13 patients in whom thiouracil treatment was discontinued after an average period of only three and one-half months have had a rather prompt symptomatic recurrence of the thyrotoxic state and an elevation in the basal metabolic rate.

On the other hand, in table 3 we find that 8, or 62 per cent, of the 13 patients whose thiouracil medication was omitted have had remissions persisting longer than the usual critical period of two months and, indeed, continuing to date.

Our experience indicates, then, that 45 per cent of all patients with thyrotoxicosis of the type observed in a large general hospital in the Middle West could be treated with some degree of success by thiouracil alone. After more than twenty-two months' experience with the drug it has been possible to discontinue its administration in 8 patients, which constitutes 22 per cent of this special group, or 10 per cent of the initial series, with resultant remissions to date. Undoubtedly the criteria that we have outlined for the omission of the drug are more rigid than those of other observers. In our opinion, however, these rules were justified by the recurrence of symptoms in 5 patients, which number comprises 13 per cent of the selected group, or 6 per cent of the initial series, who did not follow these criteria. Since over 60 per cent of those discontinuing treatment with the drug in this selected group have had no recurrence and since a reappearance of symptoms occurred in those who omitted the drug prematurely and against advice, we must conclude that our data, though possibly not statistically significant, reaffirm the results previously noted in the literature.

COMMENT

Before reaching conclusions regarding the permanence of the results attained by thiouracil medication of patients with thyrotoxicosis, it is necessary to review certain basic considerations. The first of these considerations is that the natural history of untreated toxic non-nodular goiter is that of a self-limiting disease characterized by natural remissions and exacerbations. In 1913, before the use of iodine in the management of the condition, Plummer [6] reviewed in detail the course of 2,917 patients with goiters operated on at the Mayo Clinic between Jan. 1, 1909 and Jan. 1, 1913. Of the patients who had diffusely hyperplastic goiters with thyrotoxicosis he said "If the average course of the intoxication be represented by a curve, the greatest height is reached during the latter half of the first year and then suddenly drops to the twelfth month. In many instances it reaches the normal base line during the next six months. More often it fluctuates with periods of exacerbation for the next two to four years. Secondary symptoms and exophthalmos may remain, but the active course only rarely continues over four years without distinct intermissions." In 1924 Barker [7] stated that the average duration of hyperthyroidism with non-nodular goiter was about two to three years, regardless of how it was treated, "medically, surgically or radiologically." In his words "You may, it is true, compel a subsidence of symptoms by treatment but rarely a cure until this time has elapsed; moreover, after recovery from one attack these patients are prone to recurrences in later life." More recently Fitz [8] has emphasized this cyclic nature of both the untreated and the treated disease. He discusses 1 case which clearly shows the fallacy of referring to the statement "permanent remission." This woman had a thyroidectomy for thyrotoxicosis in 1913, again in 1924, another eight months later and, finally, another in 1932. Each thyroidectomy was followed by a remission in the course of the disease.

With this knowledge of the life history of the untreated disease, or even of the treated disease, one readily appreciates the necessity of first reviewing the evidence, which may suggest to some that thiouracil does more than maintain the patient in an asymptomatic state until a natural remission occurs. Iodine has been used in this manner when medical treatment alone was indicated. That the iodine effect on the active thyrotoxic state disappears within a short time after the drug has been withdrawn has been amply demonstrated by Means.[9]

In our opinion thiouracil does have an effect different from iodine in that it may produce a change which persists for at least a period of some months after administration of the drug is discontinued. The evidence in support of this consists primarily of the data already presented. This shows that if there is a recurrence of the thyrotoxic state after therapy is omitted it manifests itself in the great majority of cases within the subsequent two months. Thus when remissions persist longer than two months we presume, at least, that some change must have occurred, probably induced by the drug, that permits a more prolonged and more complete remission. Since, as noted by Plummer, the average patient with untreated thyrotoxicosis does not experience a complete natural remission in less than eighteen months, the fact that our more persistent remis-

TABLE 2.—*Recurrence of Thyrotoxicosis After Discontinuing Treatment with Thiouracil*

Average Initial Basal Metabolic Rate	Size of Goiter	Length of Preceding Treatment, Mo.	Recurrence Period, Mo.
+35	++	1	1
+31	++	1	2
+65	++	2½	2
+83	++	5	2
+29	+	8	2½
Average		3.5	

TABLE 3.—*Persistent Remission of Thyrotoxicosis*

Average Initial Basal Metabolic Rate	Size of Goiter	Length of Preceding Treatment, Mo.	Duration of Remission to Date, Mo.
+23*	0	3	9
+23	+	5½	12
+21	0	6½	12
+26	0	11	3
+35	+	13	6
+35	+++	15	5½
+26	++	15	4
+41	+	16	2½
Average		10.6	6.6

* Diagnosis in doubt because of hypertension of 250/90.

6. Plummer, H. S.: The Clinical and Pathological Relationship of Simple and Exophthalmic Goiter, Am. J. M. Sc. **146**: 790, 1913.
7. Barker, L. F.: Exophthalmic Goiter, Internat. Clin. **1**: 1 (March) 1924.
8. Fitz, Reginald: A Panoramic View of Thyrotoxicosis, J. A. M. A. **125**: 943 (Aug. 5) 1944.
9. Means, J. H.: Thyroid and Its Diseases, Philadelphia, J. B. Lippincott Company, 1937.

sions occurred in the majority of cases with less than one year's treatment and continued in 8 cases for more than two months is convincing evidence that the remission was induced rather than spontaneous. It should be remembered, however, that if treatment is continued for more than eighteen months and then discontinued, the resultant remission might well be a natural one.

It has been suggested that thiouracil could not induce a relatively long remission because it produces in the gland a hyperplastic but functionally inefficient state. It has been recognized that a hyperplastic state of the thyroid can exist in a patient experiencing a relatively permanent remission of his thyrotoxicosis. This has been demonstrated by the structure of the remnant of the thyroid gland after thyroidectomy by Rienhoff [10] and Branch. They examined sections of the thyroid gland removed several months after thyroidectomy and found the characteristic evidence of stimulation of the thyroid. Even though this state of hyperplasia persists, Preston and Thompson [11] concluded that a single thyroidectomy may accomplish control of the toxic state sufficiently to avoid subsequent operations in 85 per cent of the patients.

Treatment with thiouracil has the same effect as thyroidectomy, at least temporarily. This is accomplished by reducing the function of the thyroid tissue by interference in the iodine concentration and oxidation process of the gland. It is entirely possible that the hyperplastic state of the thyroid induced by thiouracil changes to a state of normal involution after a variable time. Evidence in support of this is to be found in the report of Shirer and Cohen,[12] who observed a normal morphologic picture in a thyroid gland removed from a patient previously treated unsuccessfully for seven months with thiouracil.

Further evidence of the active effect of thiouracil in producing a more permanent change in thyroid function is found in the case reported by Barr,[4] and in 1 observed in our series in which a thiouracil induced picture of myxedema recovered slowly over a period of six months after treatment with thiouracil was discontinued.

In our opinion this evidence indicates that thiouracil does more than iodine in that it produces a change in the thyrotoxic state which persists after the administration of the drug is discontinued.

CONCLUSIONS

Thiouracil may be used in about one third of the thyrotoxic patients only as preoperative treatment, since these patients possess nodular goiters which might develop a malignant condition. Another 7 per cent of the total number will require thyroidectomy on account of complications which occur during thiouracil therapy. The most serious of these complications to be kept in mind is agranulocytosis.[5] About 15 per cent of the patients with thyrotoxicosis will leave the physician's care for personal reasons of the patient, which are in some instances related to difficulties encountered in thiouracil therapy.

In the remaining 45 per cent of the total group, made up of those with toxic hyperplastic goiter, thiouracil therapy may be discontinued at the end of a little over an average of ten months with the prospect that 60 to 80 per cent of the patients will experience a relatively persistent drug induced remission. For this selected group, at least during the period of observation which has continued to date, this result is as satisfactory as that of subtotal thyroidectomy. The majority of patients with thyrotoxicosis, however, must be treated by surgical means. Those receiving thiouracil must continue treatment with the drug for indefinite periods. For these reasons surgery is still the treatment of choice in the management of this condition. Thiouracil is superior to iodine, however, as it is more specific in its action and induces a more complete and permanent remission in patients with this disorder. In the treatment of selected cases of thyrotoxicosis, therefore, thiouracil treatment must be considered as a form of therapy which has promise, and ultimately it may prove to be as satisfactory as thyroidectomy in this group of patients.

10. Rienhoff, cited by Fitz.[5]
11. Preston, F. W., and Thompson, W. O.: Persistence and Recurrence of Toxic Goiter Following Subtotal Thyroidectomy, Arch. Int. Med. **69**: 1019 (June) 1942.
12. Shirer, J. W., and Cohen, M.: The Effects of Thiouracil on the Thyroid Gland, Ann. Int. Med. **23**: 790 (Nov.) 1945.

INDUSTRIAL MANAGEMENT AND OCCUPATIONAL CANCER

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The term "occupational cancer" applies to malignant tumors which originate in persons during the course of and as the result of the regular and usually prolonged exercise of certain occupational activities which entail contact with some exogenous, physical or chemical carcinogenic agent acting in proper intensity. Occupational cancers are in general elicited by specific factors which form an integral part of the ordinary working conditions and thus are not the result of some unforeseen, accidental injury sustained while at work.

Although a few of the cancers so far recognized as of occupational origin have been known or have existed without correct recognition prior to the advent of the modern industrial era, such as the soot cancer of the chimney sweeps and the cancer of the lung of the cobalt and uranium miners in Schneeberg and Joachimsthal, the great majority of occupational cancers appeared after the start of the present industrial development and as a result of it. During the last century there occurred not only a constant rise in the absolute number of these malignant growths but also a decided increase in the types of organs affected by them, in the number of exogenous occupational agents involved in their production and in the variety of manufacturing establishments in which workers were afflicted with them.

An analysis of the available data on occupational cancer has shown that the type of the resulting tumor, the length of the latent period preceding its manifestation, the organ affected and the age of the person involved depend on the character of the carcinogenic agent, the type and intensity of exposure and the age of the person when the first exposure takes place. The soot cancer of the scrotum found in chimney sweeps, for instance, was observed some hundred and twenty-five years ago even in children, since boys as young as 4 years were used in England at that time for cleaning chimneys. The exposure to the carcinogenic soot during this operation was severe, and the degree of cleanliness among these unfortunate youth was very low. When, during the middle of the last century, the English government repeatedly raised the age limit of the apprentices of this trade, there followed a gradual rise of the age range at which the scrotal cancers appeared among chimney sweeps. At the same time the institution of better hygienic conditions and the improvement of working tools and of chimney construction reduced

From the Warner Institute for Therapeutic Research.

the degree of exposure to soot. As the result of these changes the scrotal cancer of chimney sweeps in England now appears at the same age as that found in members of the general population affected by cancer of the scrotum of unknown etiology. Only the increased incidence of this particular type of tumor among chimney sweeps has remained as evidence of the action of an occupational carcinogenic agent.

However, not all occupational cancers have followed such a favorable development. Whenever the managers of new plants and their medical advisers have neglected to profit, in the construction and operation of their establishments, from the adverse experiences previously had by other manufacturers in the same fields, there has appeared some ten to fifteen years later a renewed, acute and sometimes epidemic-like occurrence of occupational cancers in these industries. Such a course of events is exemplified by the incidence of cancers of the urinary bladder in workers of the aniline dye industry. These tumors were first observed in 1895 in German dye works and were later found among the chemical workers of other countries, such as Switzerland, Italy, England, Japan and the United States. The time of appearance of cancers of the bladder of this origin followed closely the time of large scale development of chemical industries in the countries mentioned. Thus the first cancers of the bladder in chemical workers of this country were noted in 1932, that is, approximately fifteen years after the American dye industry had reached large proportions. Within the short period of six years thereafter almost 100 cases of this industrial cancer occurring in men of relative youth were placed on record from one single chemical concern, attesting to the presence of a relatively massive exposure of the workers to the causative agents—that is, betanaphthylamine and benzidine. The full significance of this incidence figure becomes apparent from the fact that there were only about 300 cases of this particular occupational cancer reported, according to the statistics of the German government, from the entire German chemical industry within a period of forty years, that is, from 1895 to 1935. Although no authentic data are available as to the occurrence and the incidence of tumors of the bladder among the workers of other American chemical concerns, the existence of such cases is known.

Cancers resulting from contact with radiant energy—that is, the rays from radioactive substances and roentgen rays, illustrate strikingly the influence which the type and intensity of contact exert on the formation of the ensuing tumor. It appears that the inhalation of radioactive gases or radioactive dust causes cancer of the lung, such as that sustained by miners in Schneeberg and Joachimsthal, whereas the local action of radioactive and roentgen energy on the skin causes the development of cancers of the skin, such as those seen in radiologists, roentgenologists, their assistants, and in x-ray tube manufacturers, physicists and engineers. The ingestion of radioactive matter, on the other hand, causes the development of cancers of the bones, such as those observed several years ago in girls who applied luminous paint to dials. However, in more recent years cancers of the blood, known as leukemias, have been noted in increasing number among physicians and radium chemists exposed frequently to relatively small doses of roentgen rays or rays from radioactive matter. These deleterious effects on the blood-forming tissue have their cancerous equivalents in the leukemias observed among persons exposed to benzene. This organic solvent, like roentgen rays and rays from radioactive substances, causes a destruction of the blood-forming tissue and results in a fatal anemia when acting in large doses, but it may elicit leukemic responses when acting in small doses and in suitable intervals on the blood-forming tissue.

In most cases of industrial cancer, experimental research on cancer has succeeded in demonstrating the specific carcinogenic agent involved by using these agents to reproduce similar tumors in animals. Definite proof of carcinogenic properties have thus been obtained for arsenic, tar, pitch, soot, crude mineral oil, crude paraffin oil, anthracene oil, shale oil, some fuel and lubricating oils, creosote, benzene, aromatic amines, ultraviolet rays, roentgen rays and rays from radioactive substances. In recent years, however, cancers of the lung have been noted among workers in chromate plants, nickel refineries and asbestos-manufacturing establishments. These tumors are either suspected or recognized as being of occupational origin. An interesting feature of these cancers is represented by the fact that the cancers of the lung in chromate workers were observed only in several German plants, while the cancers of the lung in nickel refinery workers were found exclusively in English plants where the nickel carbonyl process was used. Although the same process is employed in some nickel refineries located in Canada and the United States, cancers of the lung have not been noted among the workers employed here if full credence can be given to the meager information available on this matter. Cancer of the lung in asbestos workers, on the other hand, has been reported from Germany, England and the United States. The actual causative agent in the production of cancers of the lung in chromate, nickel and asbestos workers is still unknown.

The rapid increase in the number of recognized and suspected agents causing industrial cancers which have occurred during the last forty years makes it more likely that new and heretofore unsuspected carcinogenic agents of an industrial nature will be discovered during the coming years. Such a development is foreshadowed by observations made during recent years by American investigators. It was found that cancers of the liver developed in mice exposed to carbon tetrachloride, a commonly used organic solvent. The inhalation of ethyl carbonate (urethane), which is employed for anesthetic purposes, resulted in the appearance of cancers of the lung in mice. Tumors of the bladder were formed in rats fed diethylene glycol, which is one of the newer widely used organic solvents. Tumors of the peripheral nervous tissue were seen in the ears of rats to which crude ergot, a drug extensively used in obstetric practice, had been fed over long periods.

Occupational carcinogenic agents produce cancers in numerous organs. Cancers of the skin are elicited by contact with arsenicals, tar, pitch, soot or carbon black, crude mineral oil, lubricating oil, shale oil, crude paraffin oil, anthracene oil, solar and ultraviolet rays, roentgen rays and rays from radioactive substances. The number of industrial cancers of this organ runs into several thousands. Cancers of the nasal passages have been noted after occupational exposure to chromates, nickel carbonyl and radioactive substances. Cancers of the bronchi and lung have been traced to an industrial exposure to arsenicals, chromates, nickel carbonyl, soot, tar, asbestos and radioactive substances. Cancers of the lip have appeared following contact with tar and after prolonged exposure to solar rays, while cancers of the mouth and of the tongue seem to be etiologically related to an industrial contact with tar and arsenicals. Cancers of the bladder, of the ureter and of the kidney have fol-

lowed occupational exposures to aromatic amines such as naphthylamine, benzidine and aniline and occasionally to tar and arsenicals. Cancers of the blood, called leukemias, have resulted from contact with benzene, roentgen rays and rays from radioactive substances. The latter are also responsible for the occurrence of cancer of the bones.

The exposure time necessary for eliciting cancerous reactions in exposed workers varies greatly with the type and potency of the carcinogenic agent, with the intensity of exposure and with the susceptibility of the individual. The range is from six months to three to four decades, while the average exposure time is from five to fifteen years. In most instances occupational cancers appear in a younger age group than that found for the same cancer of unknown etiology in the general population. Age and sex factors do not, as a rule, play any role in the production of industrial cancers. The incidence rate of these tumors shows decided variations not only for the different carcinogenic agents but also for the different operations and is directly proportional to the potency of the carcinogenic agent and the intensity and length of exposure. Cancer of the bladder thus affects from 30 to 90 per cent of the severely exposed dye workers, while cancer of the lung kills from 75 to 80 per cent of the cobalt miners of the Schneeberg mines. Carcinogenic agents eliciting occupational cancers of the skin, on the other hand, have a lower morbidity and mortality rate because the precancerous changes of the skin preceding the appearance of the tumors gives ample warning, as a rule, of the threatening malignant condition, while the ready accessibility of the skin to therapeutic measures enhances the prognosis of cure. It is of a certain importance from an industrial point of view that the skin of colored workers is less susceptible to the cancerigenic action of solar rays and of tar, pitch and similar substances than that of white, and especially of fair-skinned, workers.

The total number of occupational cancers placed on record is small when compared with the large number of cancers of unknown etiology. It is obvious, however, that the latter group contains an undetermined number of cancers of occupational origin, as many of them either are not properly recognized or are not made a matter of public information.

Although today a great deal of evidence on the causes of occupational cancer and the conditions under which it develops is available, relatively little effort has been made to spread this knowledge among parties who are vitally concerned with this information, namely the managers and physicians of industrial concerns, although they carry the main load of controlling this preventable type of cancer. This situation is the more deplorable because the present rapid development of industry tends to extend the hazards of the known industrial carcinogenic agents while at the same time creating new ones which may cause the appearance of cancers ten to twenty years hence, unless concerted efforts are made in time to discover and control such dangers by appropriate countermeasures. It is essential that industry should devote considerably more effort than heretofore to determining the cancerous or noncancerous nature of such of its numerous products as may be suspected on general grounds of cancerigenic properties. As occupational cancers are chance experiments on cancer in man, conducted by modern industry on a large scale, which render direct, reliable and conclusive information as to the cause and mechanism of human cancer, the investigative study of these conditions deserves a great deal more consideration than it has been given in the past. The experience gained from the study of occupational cancer, and especially of its causative mechanism and its prevention and control, should prove of great value in the future in fighting cancer in general at its source; that is, it should aid in the elimination of the causes of cancer before they are capable of initiating the malignant growths. In waging this campaign it should be realized that a well planned, systematic and, probably, prolonged attack must be launched if worth while results are to be expected. However, I am convinced that with the necessary perseverance and determination this battle against occupational cancer in particular and against cancer in general can be won, if every one concerned aids in the effort.

If industry can be persuaded to finance the foundation and maintenance of an organization exclusively devoted to the study of the causation and control of industrial cancers, not only will industry be the main beneficiary of this move, but also it will greatly advance the fight against cancer in general, which is of direct concern to every one, unless it is forgotten that every tenth adult dies from this disease.

RECOMMENDATIONS FOR THE CONTROL OF OCCUPATIONAL CANCER

1. Plant management officials, industrial workers and members of the medical profession must be made increasingly aware of the fact that numerous agents of our new industrial environment possess carcinogenic properties.

2. Construction and chemical engineers should design buildings, machinery and apparatus with this hazard in mind—that is, they should try to favor the closed system of production, the installation of adequate exhaust ventilation, the use of building material which does not absorb carcinogenic substances, the avoidance of nooks, crevices and ledges where carcinogenic dust can be deposited, and the employment of wall and floor covering that can be thoroughly and repeatedly cleaned with water and steam used in connection with cleansers.

3. Adequate provision must be made for the removal of carcinogenic material from waste gases, fumes, waters, dust and the like before these waste products are released into the air, public waters or other channels affording the contact of the general population with carcinogenic industrial wastes.

4. Carcinogenic material must be packed in leakproof containers.

5. Similar appropriate protective technical measures should guard the persons handling roentgen rays and radioactive substances from being exposed to deleterious quantities of radiant energy.

6. These measures must be sufficiently extensive to protect also persons working or living in the immediate environment where physical or chemical carcinogenic agents are handled.

7. Whenever the use of carcinogenic material in industry cannot be eliminated by the use of substitutes, workers should be protected from contact with carcinogenic agents by suitable protective clothing, gloves, masks and the like and by the enforced observance of adequate hygienic measures, such as the use of washing facilities, showers and special rooms for storing street clothes and for taking meals and frequent changes of working clothes.

8. Frequent and experienced medical supervision of the workers exposed to carcinogenic material is impera-

tive for effective control of the hazard. This supervision must also extend to workers who have left the employment after having been exposed to carcinogenic agents for a sufficiently long time or who have been shifted to noncarcinogenic operations.

9. A nationwide survey by skilled investigators should be made to determine the actual scope of the problem of industrial cancer. Representatives of management, industrial physicians, members of the Public Health Service and of departments of industrial hygiene and possibly also representatives of the workers should participate in such a survey.

10. Precancerous and cancerous industrial diseases should be made notifiable to the departments of industrial hygiene of the various states.

11. Adequate compensation laws for occupational diseases should be passed for the protection of both management and workers against excessive awards or inadequate compensation, respectively, for claims that result from the production of occupational cancers.

12. Government inspectors should examine all industrial plants at regular intervals to determine whether or not they meet the essential safety requirements necessary for minimum protection of the workers against the hazards of industrial cancer.

13. An institute for the study of industrial cancer should be founded and should be attached to or coordinated with one of the existing large cancer research centers, in order to provide for proper integration of the results obtained by such investigations with those produced by cancer research in general. Such an organization would serve industry for consultative and investigative purposes on matters of occupational cancer.

14. A committee composed of industrial physicians, cancer research workers, industrial physicists, chemists and engineers, compensation lawyers, members of the Public Health Service and of state departments of industrial hygiene, representatives of industrial management and union officials should be created, whose members should act as a body of consultants and special experts to the Institute for the Study of Occupational Cancer.

Art and Anatomy.—Among the great artists who engaged in dissection were Michael Angelo, Raphael and Albrecht Dürer. Greatest of all was Leonardo Da Vinci (1452-1519). This gifted and versatile artist, a man centuries ahead of his time in original ideas, who visualized aviation and modern methods of warfare and who discussed many problems of engineering which were later put into practice, also made discoveries in anatomy, such as the maxillary sinus and the moderator band of the heart. He was the first to demonstrate the ventricles of the brain by wax injections and to depict correctly the fetus and its membranes within the uterus. Originally he set out to study the bones and muscles in their relation to art, but his interest grew, and he pursued his investigation of the deeper parts, the viscera, the brain, the blood vessels and especially the heart. He intended to publish a great work on anatomy in collaboration with Marco Antonio della Torre of Pavia, but this project was abandoned owing to the death of his co-worker. It is only within recent years that the value of Leonardo's contribution to anatomy has been fully appreciated. He made hundreds of sketches and manuscript notes, many of which are preserved in the Royal Library at Windsor and have only recently appeared in print. This apostle of naturalism in art must also be regarded as a leading pioneer in anatomy.—Guthrie, Douglas: A History of Medicine, Philadelphia, J. B. Lippincott Company, 1946.

Clinical Notes, Suggestions and New Instruments

ACUTE SYPHILITIC NEPHROSIS SUCCESSFULLY TREATED WITH PENICILLIN

J. H. BARR JR. M.D.; H. N. COLE, M.D.; J. R. DRIVER, M.D.; ROSCOE D. LEAS, M.D.; MAX MILLER, M.D., and L. G. STRAUSS, M.D.
Cleveland

The nephrotic syndrome is defined as a clinical symptom complex characterized by profuse proteinuria, hypoalbuminemia and edema without serious renal insufficiency or hypertension. It may be seen in a variety of conditions and has been observed in connection with acute syphilis.[1]

REPORT OF CASE

History.—J. Y., a white man aged 31, was first admitted to University Hospitals July 18, 1945 with a chief complaint of generalized edema and genital ulcerations of approximately one week's duration.

In the early part of June 1945 several superficial lesions developed in the coronal sulcus of the penis. These gradually enlarged, with subsequent ulceration. July 2 he was seen by one of us (L. G. S.), who made the diagnosis of chancroid of the penis and started the patient on sulfathiazole two tablets four times daily. This was continued until July 6, when the result of the serologic test for syphilis drawn at the first interview was reported as strongly positive. On July 7 he was given 0.04 Gm. of oxophenarsine hydrochloride (Mapharsen) intravenously, with no immediate reaction. However, eight to twelve hours later he had a shaking chill and temperature elevation to 104 F. Within twelve hours the patient was again symptom free. July 10 another injection of 0.02 Gm. of oxophenarsine hydrochloride was given intravenously, without ill effect. He returned on July 15 and at that time had moderate edema of the face, legs, penis and scrotum and complained of general malaise, anorexia and low back pain. No urine examination was done at this time. On July 17, when he was seen again, the edema of the face, legs, penis and scrotum was more severe. The urinalysis revealed 4 plus proteinuria and an occasional red blood cell. On July 18 the edema was less severe and the urine contained only an occasional red blood cell. He was then referred to University Hospitals for study.

Physical Examination.—The temperature was 37 C. (98.6 F.), pulse rate 82, respiratory rate 18, blood pressure 124/72, weight 78.1 Kg. He was well developed and well nourished. He did not appear to be in distress. There were no abnormalities of the skeletal system. The mucous membranes were of normal color with no abnormal lesions. There was slight facial edema, especially noticeable about the eyes. There was no apparent edema of the upper extremities. There was moderate pitting edema of the sacrum, external genitalia, thighs and legs. The skin was normal in color and texture, with no abnormal lesions. There was a well defined, firm, freely movable nontender lymph node in the right inguinal region measuring 2 by 2 cm. There were two smaller lymph nodes similar in character in the left inguinal region. There was no other lymphadenopathy.

There was moderate periorbital edema. The conjunctivas were pale. The corneas and scleras were normal. The pupils were equal and regular, measured 4 mm. and reacted normally

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From the Department of Dermatology and Syphilology and the Department of Medicine of University Hospitals of Cleveland and Western Reserve University School of Medicine.

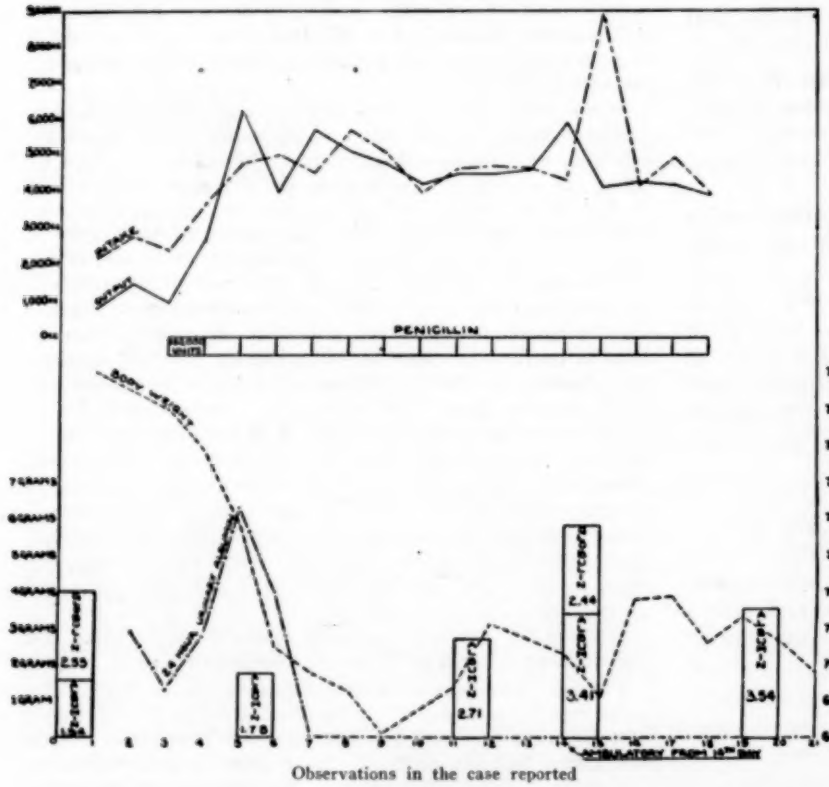
The work described in this paper was done under a contract, recommended by the committee on medical research, between the Office of Scientific Research and Development and the Western Reserve University.

1. Cole, H. N.: Acute Syphilis of Kidney, Am. J. Syph. **4**: 46 (Jan.) 1920. Baker, B. M., Jr.: The Relation of Syphilis to Nephritis, Bull. Johns Hopkins Hosp. **65**: 196, 1935. Herrmann, G., and Marr, W. Clinical Syphilitic Nephropathies, Am. J. Syph. & Neurol. **19**: 1, 1935. Moore, J. E.: The Modern Treatment of Syphilis, ed. 2, Springfield, Illinois & Baltimore, Charles C Thomas, 1941. Stokes, J. H.; Beerman, Herman, and Ingraham, N. R., Jr.: Modern Clinical Syphilology, ed. 3, Philadelphia & London, W. B. Saunders Company, 1944, p. 1177.

to light and in accommodation. The extraocular muscles were normal. Ophthalmoscopic examination revealed that the fundi and disks were normal. Mouth and throat did not show abnormality.

The thyroid gland was normal. There was no evidence of venous distention. Tracheal tug was not present. The chest was normal in size and contour. The percussion note was resonant throughout and the breath sounds were normal in intensity and character. There were no rales. The heart was not enlarged. The apex was percussable 10 cm. from the midsternal line in the fifth intercostal space. The sounds were normal in intensity and character. There were no murmurs. The rhythm was regular. The peripheral vessels were normal. The liver, spleen and kidneys were not palpable. There was slight pitting elema of the lower abdominal wall.

The scrotum and penis were moderately swollen. In the coronal sulcus there were four small shallow superficial tender ulcerations ranging in size from 0.5 to 0.9 cm. with well defined irregular slightly undermined borders. The bases were clean but covered with a thin seropurulent exudate. The tone of the rectal sphincter was normal. There were no hemorrhoids. The prostate was asymmetrical. The left lobe was abnormally large. The right lobe was normal in size. The gland was freely movable, smooth and normal in consistency.



Observations in the case reported

The cranial nerves all functioned normally. Muscle strength was normal. Vibratory, pain and temperature sensations were all normal. The deep tendon reflexes were all equal and normally active. There were no pathologic reflexes.

Laboratory Examinations.—The hemogram was normal. The urine was yellow and clear, with a specific gravity of 1.030; the reaction was acid, albumin was 4 plus, tests for sugar were negative and the benzidine test was negative. Microscopic examination revealed 1 or 2 red blood cells per high power field on the first examination only, a few white blood cells per high power field and a few hyaline casts per high power field. The twenty-four hour protein excretion was 2.9 Gm. The twelve hour Addis count revealed a specific gravity of 1.027, 1,600,000 white blood cells and 800,000 red blood cells. The serologic test for syphilis revealed a 4 plus Wassermann, 4 plus Kline diagnostic and Kline exclusion of 160 units (approximately 40 Kahn units). Total serum proteins were 4.09 Gm. per hundred cubic centimeters, albumin was 1.54 Gm. per hundred cubic centimeters, globulin was 2.55 Gm. per hundred cubic centimeters and the albumin-globulin ratio was 0.60 Gm. per hundred cubic centimeters. Serum cholesterol on the first hospital day was 433, on the eleventh hospital day 380 and on the nineteenth hospital day 267 mg. per hundred cubic centimeters. Urea clearances were 140 per cent of normal the first hour and 82 per cent the second hour. Blood urea nitrogen was 10.5 mg. per hundred cubic centimeters and nonprotein nitrogen 30.8 mg. per hundred cubic centimeters. Lumbar puncture gave normal results. X-ray examination disclosed no evidence of a pathologic process in the chest. The heart and aorta were normal in size and contour. Excretory urograms revealed that diodrast excretion was normal. The kidneys were questionably enlarged with no other evidence of abnormality. The basal metabolic rate was 4 per cent. An electrocardiogram was normal. Bacteriologic examinations revealed no Hemophilus ducreyi organisms. Repeated dark field examinations of penile lesions revealed no Treponema pallidum. Intradermal tests with Frei and Ducrey antigens were negative in forty-eight and seventy-two hours. Urethral smear and culture following prostatic massage were negative for Neisseria gonorrheae organisms.

On the basis of the history and the clinical and laboratory findings the diagnosis of early acquired mucocutaneous syphilis with associated syphilitic nephrosis was made. The patient was given a high protein, low salt diet and was placed on bed rest. The proteinuria decreased and diuresis occurred with a 1 Kg. weight loss within the first three hospital days. Penicillin sodium 20,000 units every three hours intramuscularly for a total of 2,400,000 units in a fifteen day period was started on the third hospital day. Improvement in renal status was spectacular, with complete disappearance of edema, a weight loss of 10 Kg. and only minimal proteinuria six days after institution of penicillin therapy.

On the twelfth hospital day the diuresis was complete and the weight was maintained between 68 and 70 Kg. throughout the hospital stay. Urinalyses, kidney function tests and clinical examinations were all normal at this time and remained so throughout the hospital stay. The penile lesions were completely healed on discharge on the twenty-second hospital day.

Subsequent Course.—Blood pressure and urinalysis at weekly intervals after discharge from the hospital remained within normal limits. Clinical examinations and blood serologic tests at monthly intervals showed rapid reversal of the positive serologic test for syphilis to negative.

The patient was readmitted to University Hospitals on Nov. 1, 1945, an interval of approximately three and one-half months since his discharge. At this time physical examination gave normal results. A reevaluation of renal function including urinalysis, urea clearances, twenty-four hour Mosenthal concentration dilution test, twenty-four hour Addis count, twenty-four hour urinary protein excretion and serum cholesterol examinations were all normal. The patient's weight at this time was 73.9 Kg. and his serologic test for syphilis was negative.

COMMENT

It is our opinion that the diagnosis of syphilitic nephrosis is highly probable in this case. It is certain that the picture presented could hardly have been the result of arsenical therapy, since trivalent arsenic is usually hepatotropic rather than nephrotropic and in the latter case produces a hemorrhagic nephritis. Nor did the symptomatology during the four days of sulfonamide therapy make one think of a sensitivity reaction due to sulfathiazole. On the other hand, the patient had a penile lesion, an accompanying nephrotic syndrome and positive sero-

logic test for syphilis. The diagnosis seemed to be confirmed by his response to penicillin therapy, as indicated by the rapid weight loss, the decline in twenty-four hour urinary protein excretion, the increase in the albumin content of the blood and complete cure in a ten day period, a sequence of events distinctly unusual in any type of adult "lipoid" nephrosis.

In the past it has been found that acute syphilitic nephrosis was hardly amenable to mercury therapy and many of the patients died. With trivalent arsenical therapy, results were much better though far from perfect. Penicillin therapy theoretically should be ideal for this condition, as there have been no reports of renal irritation following its administration. This seemed to be true in the case reported.

It would, of course, have been desirable to have a pretreatment urinalysis. In addition, it must be noted that a slight (1 Kg.) weight loss occurred in the first two hospital days on bed rest and low salt diet alone. The other evidence, however, is so strong that we believe it is justifiable to make the diagnosis of acute syphilitic nephrosis. To date the patient has remained clinically well for a period of three and one-half months, and the serologic test for syphilis has rapidly reversed from 40 Kahn units to negative.

SUMMARY

A white man having a genital lesion, the nephrotic syndrome and a positive serologic test for syphilis was successfully treated with penicillin. Penicillin is probably the ideal agent for the treatment of acute syphilitic nephrosis.[2]

1352 Hanna Building, Cleveland 15.

Council on Foods and Nutrition

ACCEPTED FOODS

The following additional foods have been accepted as conforming to the Rules of the Council on Foods and Nutrition of the American Medical Association for admission to Accepted Foods.

JAMES R. WILSON, M.D., *Secretary.*

PREPARATIONS USED IN THE FEEDING OF INFANTS (*See* Accepted Foods, 1939, p. 156)

Beech-Nut Packing Company, Canajoharie, N. Y.

BEECH-NUT STRAINED PINEAPPLE PUDDING contains milk (raw-whole), unsweetened pineapple, white rice, sugar, cornstarch, whole eggs, egg yolks, salt and water.

Analysis (submitted by manufacturer).—Total solids 22.40%, moisture 77.60%, ash 0.68%, fat (ether extract) 0.86%, protein (N × 6.25) 1.70%, crude fiber 0.04%, carbohydrates (other than crude fiber) 19.12%, calcium 0.049%, phosphorus 0.059%, iron total 0.32 mg. per hundred grams, iron "available" (bipyridyl method) 0.30 mg. per hundred grams, copper 0.07 mg. per hundred grams.

Calories.—91 per hundred grams, 26 per ounce.

Vitamins—	Per Hundred Grams
Vitamin A, total	88 U. S. P. units
Ascorbic acid	0.26 mg.
Thiamine	0.030 mg.
Riboflavin	0.055 mg.
Niacin	0.58 mg.

Clapp's Baby Food Division, American Home Foods, Inc., Rochester, N. Y.

CLAPP'S INSTANT OATMEAL is composed of whole oatmeal, non-fat dry milk solids, dried brewers' yeast, calcium phosphate, table salt and iron ammonium citrate.

Analysis (submitted by manufacturer).—Carbohydrate 71.5%, protein (N × 6.25) 16.3%, fat (ether extract) 1.2%, ash (total minerals) 4.8%, crude fiber 1.0%, moisture 5.2%, calcium (Ca) 820 mg. per hundred grams, phosphorus (P) 670 mg. per hundred grams, iron (Fe) 30 mg. per hundred grams, copper (Cu) 0.8 mg. per hundred grams.

Calories.—103 per ounce.

Vitamins.—Thiamine (B_1) ..... 1.0 mg. per hundred grams
Riboflavin (B_2) ..... 0.3 mg. per hundred grams

2. The results which have been presented in this paper must be interpreted in light of the fact that from June 1943, the date of inception of the study, to the present, commercial penicillin has been a changing mixture of various substances. The content of 'impurities' has gradually decreased as potency, in terms of units per milligram, has increased. The relative amounts of the several identified penicillin fractions C, F, X and K have likewise varied from time to time. Those two changes, and perhaps others, suggest that therapeutic efficacy may not have remained constant and that it may be significantly different today from what it was originally. It is not now possible to assess the extent to which these changes may have affected the results here reported.

Libby, McNeill & Libby, Chicago.

LIBBY'S STRAINED AND HOMOGENIZED CUSTARD PUDDING contains water, sweetened condensed milk, whole eggs, corn starch, wheat flour and vanilla concentrate.

Analysis (submitted by manufacturer).—Total solids 31.18%, total moisture 68.82%, total ash 0.76%, protein 3.66%, fat (ether extract) 3.44%, crude fiber 0.87%, salt 0.36%, carbohydrates (by difference) 23.42%, iron 0.00038%, calcium 0.0715%, phosphorus 0.122%.

Calories—140 per hundred grams.

Vitamins—	Per Hundred Grams
Thiamine	Trace
Riboflavin	0.141 mg.
Vitamin A	425 international units

Council on Pharmacy and Chemistry

REPORT OF THE COUNCIL

The Council has authorized publication of the following statement.

AUSTIN SMITH, M.D., *Secretary.*

RUTIN

Recent newspaper articles announcing Rutin as a "cure" for high blood pressure, based on a release from the United States Department of Agriculture, have again demonstrated the inadvisability of premature publicity concerning new medical discoveries. As a result of these articles the office of the Council on Pharmacy and Chemistry has received numerous inquiries concerning the properties and availability of this new drug.

The only published report in a scientific periodical about the clinical use of rutin at the time this statement was prepared, is a brief note by Griffith, Couch and Lindauer (*Proc. Soc. Exper. Biol. & Med.* **55**:228 [March] 1944) describing preliminary observations on 14 patients with increased capillary fragility treated with rutin. The authors concluded that "in certain cases rutin appears to have the property of decreasing capillary fragility in subjects in whom this fragility is initially increased."

Rutin is a glucoside found in a number of plants, the principal sources being tobacco and buckwheat. Laboratory investigations have been conducted by J. F. Couch and his associates at the Eastern Regional Research Laboratory of the United States Department of Agriculture at Chestnut Hill, Pa. The clinical work on rutin has been done chiefly at the University of Pennsylvania under the direction of Dr. J. Q. Griffith Jr. Although several firms are interested, no commercial production of rutin has yet been made.

Although newspaper accounts state that rutin is a treatment for high blood pressure, the Agriculture Department release stated that, "according to clinical observations at the Medical School of the University of Pennsylvania, rutin is effective in the treatment of conditions arising from high blood pressure associated with increased capillary fragility." This is obviously quite different from saying that rutin is a treatment or "cure" for high blood pressure. Furthermore, rutin has not been demonstrated to have any effect on the blood pressure of animals or man. Also so few data have been presented on variability of capillary fragility in untreated cases of hypertension that assessment of the effect of therapeutic agents is still hazardous.

Based on the meager amount of scientific evidence that has been available, it is unfortunate that the hopes of thousands of sufferers from hypertension have been raised by irresponsible and premature publicity. Increased capillary fragility is not a common complication of hypertension; and the vascular accidents which are frequently the serious sequelae to this disease may not be due to alterations in capillary resistance. Furthermore, the methods of measuring capillary resistance are crude, and workers in this field are not agreed on the reliability of any of the methods of measurement now employed.

In considering the reports on rutin it is well to keep in mind the experience with "Hesperidin," or "vitamin P," which was alleged several years ago to increase capillary resistance. Carefully controlled experimental and clinical studies on this substance failed to substantiate the claims advanced by the original proponents (Scarborough, Harold: *Lancet* **2**:610 [Sept. 10] 1938). It is to be hoped that history will not repeat itself in the case of rutin.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JUNE 29, 1946

THE HEMAL NODES

In man and in certain of the lower vertebrates nodal collections of lymphoid cells occur; they may be classified as those provided with lymph sinuses, or the lymph nodes proper, and those provided with blood sinuses. The latter are variously known as hemolymph nodes, splenolymph nodes or, more simply and better, perhaps, as hemal nodes. Embryologically the hemal nodes are vascular structures that have become modified in the process of development by the interposition of focal collections of lymphocytes in the meshes of a reticulum derived from the walls of blood vessels. The hemal nodes are most numerous and best developed in ruminants, particularly sheep, and are scantiest in man. They are commonest in the immediate vicinity of large blood vessels, especially the aorta and its branches, notably around the splenic and renal arteries. They may be found in the prevertebral and neighboring adipose tissues from the neck to the pelvic inlet as reddish or brownish red bodies which seldom are larger than a few millimeters in their longest diameter.

Anatomically, the exact nature of the hemal nodes has not been determined; the preponderance of evidence seems to favor the view that they are more nearly related to the spleen, structurally and otherwise, than to the lymph nodes proper. According to another view they are not organs *sui generis* but a system of accessory spleens. Evidence of relationship to the spleen is furnished by Tizzoni,[1] who, after experimental splenectomy in the dog, noted the occurrence of minute reddish nodules in the abdominal fat that he interpreted, microscopically, as newly formed splenunculi. Similar results have been obtained by Winogradow [2] and by Warthin,[3] the latter however designating the bodies in question as hemolymph nodes although recognizing their close structural and functional resemblance to the spleen. Mosler [4] found innumerable small, circumscribed, reddish nodules scattered through the omentum and mesentery in a dog ten months after splenectomy. These closely resembled the structures identified by Tizzoni in animals similarly treated as newly formed masses of splenic tissue. In Mosler's animal the microscopic examination was made by Roth, who interpreted the reddish bodies as neoplasmic formations and termed them "hemorrhagic telangiectatic lymphomata." In certain lower forms of life the spleen is a divided organ and is widely distributed through the abdomen. With some of the invertebrate fish the spleen is strewn through the subserous tissues of the gastrointestinal tract, while in slightly higher forms it becomes separated and distributed in the tissues that run parallel with the stomach and intestine. In still higher fish, particularly among the selachians, the spleen consists of more or less completely separated nodules, a fact which tends to explain the occurrence of accessory spleens in man. Accessory spleens numbering one or two to a dozen or more or, as in Albrecht's case, four hundred, have been found in human beings. Albrecht noted that the splenunculi were highly vascularized, standing out as reddish or brownish red bodies which at first glance suggested the presence of a metastasizing tumor. Microscopically these were found to be plentifully supplied with lymphoid collections, their appearance to the naked eye and histologically thus simulating that of the hemal nodes.

Functionally, the hemal nodes are active in the destruction and phagocytosis of red blood cells. They seem to provide mechanisms of protection against certain infections, especially in cattle, among them forms of piroplasmosis known as African East Coast (hemoglobinuric) fever and as Texas fever, in both of which the spleen is diseased and the hemal nodes are hypertrophied. In East Coast fever Meyer was able to transmit the infection to susceptible animals by inoculations from hypertrophic hemal nodes even in circumstances in which parasites could not be demonstrated in the blood or lymph nodes of the same animal in which the hemal nodes were hypertrophic. According to Warthin [5] it is not probable that the hypertrophy of hemal nodes which occurs in Texas fever immune steers is a compensatory process. He pointed out that in other diseases of cattle corresponding hypertrophy of the hemal nodes does not occur even when the spleen is still more extensively diseased and hemolysis is more pronounced than in Texas fever. He believed that hypertrophy of the hemal nodes in Texas fever immune steers is a protective reaction against latent infections by piroplasmas which are localized in the nodes themselves, as they are in the closely related if not identical East Coast fever. Unfortunately, only formaldehyde fixed tissues from Texas fever immune animals were

1. Tizzoni, cited by Mosler: Ueber die Folgen der milzextirpation, Deutsche med. Wchnschr. **10**: 337, 1884.

2. Winogradow, K.: Ueber die Veränderungen der Lymphdrüsen und der Knochenmarko nach de Milzextirpation, Centralbl. f. Deutsche med. Wissensch. **20**: 900, 1882.

3. Warthin, A. S.: The Changes Produced in the Hemolymph Glands of the Sheep and Goat by Splenectomy, Hemolytic Poisons and Hemorrhage, J. M. Research **7**: 435, 1902.

4. Mosler: Ueber die Folgen der Milzextirpation, Deutsche med. Wchnschr. **10**: 337, 1884.

5. Warthin, A. S.: Hypertrophy of the Hemolymph Nodes in Texas Fever Immunes, J. Infect. Dis. **22**: 333, 1923.

available to Warthin, so that inoculation experiments could not be made. In any event it appears that the anatomically inconspicuous hemal nodes are organs of considerable importance.

ANTHALLAN AND HYPERESTHETIC RHINITIS

Recently newspaper and radio publicity has been given to a report [1] of use in the treatment of 42 patients with "hyperesthetic rhinitis" of a new drug, "Anthallan." Anthallan is a benzofuran derivative; other information on its chemical or pharmacologic properties has apparently not been published; it is said to be marketed by the Medico Chemical Corporation of New York City.

The author of the report claims to have coined the term "hyperesthetic rhinitis" to cover cases of rhinitis in which there is an element of "hypersensitivity of the nasal mucosa," symptoms of excessive nasal discharge, excess sneezing and nasal obstruction. It is difficult to perceive wherein these cases differ from those which have heretofore been grouped under the term "vasomotor rhinitis" or "hay fever." Certainly it is unwise to introduce a new term into a field already distinguished by a multitude of ill defined conditions to which a confusing variety of names has been assigned.

Appraisal of the effectiveness of anthallan from the treatment of the 42 patients who form the clinical material of this report is difficult. The results are obscured by a complicated system of assigning numerical values to the symptoms of the patient, then averaging these and comparing these averages with those derived from similar numerical values assigned at the end of treatment. The differences are expressed in percentage of improvement. The elements which were assessed by this statistical process were the patient's statement about his symptoms, the color of the mucous membrane, the amount of breathing space and the amount of visible secretion in the nose. In a masterly understatement the author admits that "numerical evaluation does not always express the whole clinical impression of the patient's condition. . . ." Therefore he assigns similar numerical values to a diagnostic criterion termed a "medical estimate."

This attempt to measure accurately factors which are not measurable is absurd. The result of the statistical manipulations described is to make impossible any scientific appraisal of the effects, if any, produced by the drug. The statement is made that "every change in the nasal manifestations observed during the period of treatment with anthallan can be attributed to the influence of the drug." The only justification for this statement appears to be that "the anthallan treatment period was considerably shorter than the period during which the manifestations had existed."

The laboratory studies reported included observations on red blood cell counts, white blood cell and differential counts, blood glucose, blood nonprotein nitrogen, electrocardiogram and nasal smear eosinophils. Significant changes in these well recognized factors were not observed.

Notably lacking in this report are parallel studies on control patients or, in fact, any controls whatsoever. There does not seem to be any basis in the author's results for the recent newspaper and radio publicity given anthallan as a new "cure" for hay fever. Until more convincing and scientifically controlled investigations are reported, the decision regarding the efficacy and value of anthallan must be deferred.

1. Ghiselin, A. D., Jr.: The Treatment of Seasonal and Nonseasonal Hyperesthetic Rhinitis with Anthallan, Bull. New York Acad. Med. **22**: 320 (June) 1946.

TOXICITY OF STREPTOMYCIN

Demonstration by Mushett [1] that parenteral administration of streptomycin to susceptible laboratory animals often produces fatty metamorphosis of the kidney and liver parenchyma led Hettig and his associates [2] of the University of Michigan to test its possible toxic effects on the renal, hepatic and hematologic functions of man.

Nine patients ranging in age from 15 to 61 years served as his subjects. A total dosage of streptomycin of 1.8 million units was administered in divided doses over a period of forty-eight hours or a dosage as high as 72 million units over a period of fifty-six days. Six of the 9 patients received the antibiotic by intermittent intramuscular injections at intervals of three to four hours. Two patients were given the drug by continuous intravenous infusion and 1 by continuous hypodermoclysis. Renal and hepatic function tests were performed just prior to administering the first dose and within ninety-six hours of the final dose. Two additional patients, both desperately ill of tuberculous meningitis, received 3 to 7 million units of streptomycin before death. Postmortem microscopic examination did not reveal any liver or kidney lesions that could be attributed to the action of streptomycin. Impairment of hepatic or renal function was not detected by the series of bromosulfate, cephalin cholesterol flocculation and urea clearance studies. Neither was a significant decrease of the hemoglobin or erythrocyte levels encountered in any case.

Although evidence of serious organic toxicity was not obtained, undesirable reactions were recorded with certain patients. These reactions were of two main varieties. The first (2 patients) was characterized by facial flushing, headache and fall in blood pressure, a clinical picture resembling the classic response to histamine. The second reaction (4 patients) consisted of

1. Mushett, C. W.: Personal communication (to be published).
2. Hettig, R. A., and Adcock, J. D.: Science **103**: 355 (March 22) 1945.

fever, accompanied at times with myalgias and arthralgias. Skin eruptions appeared in 2 patients. Three patients showed slight local reactions consisting of pain and tenderness at the site of intramuscular or subcutaneous injection. The local reaction was alleviated by the local application of heat. Most of the undesirable reactions were apparently related to the amount of impurities retained in the preparations, fewer symptoms being recorded with the later, more refined preparations of the antibiotic.

The purified streptomycin is thus of such low toxicity as to be freely usable in human clinical medicine.

Current Comment

EFFECTS OF THE COLD WAVE PROCESS

Recently THE JOURNAL published an article referring to cases of poisoning associated by the author with the use of thioglycolic acid in the so-called cold wave process for permanent waving of the hair. In this issue of THE JOURNAL Dr. Carey P. McCord calls attention to certain facts which he believes were overlooked by Dr. Lawrence H. Cotter in his discussion of the cold wave process. Dr. McCord is convinced that it is the hydrogen sulfide which constantly evaporates from thioglycolic acid that is primarily at fault and that it is possible by the use of certain chemical processes to inhibit the creation of hydrogen sulfide in sufficient amounts to be harmful. Dr. McCord believes that damage to the liver by the use of these chemicals has not yet been definitely shown in any instance. He believes that allergic responses are infrequent when materials used are properly prepared. Notwithstanding these statements the fact remains that some fifty different commercial agencies are engaged in the manufacture of materials used in cold wave processes, that there exist no definite standards as to what is safe or harmful, that experimentation before launching such products is for the most part inadequate and incomplete and that it is time for public recognition of the fact that as much careful evidence needs to be accumulated regarding the safety of substances placed on the surface of the body as those taken into its interior before these preparations are released for use to the general public. An editorial entitled "Artificial Halo" published in the *Technology Review* asserts, after an analysis of the cold wave process, that ". . . nothing is added, that is, nothing material, nothing except that immaterial and elusive something: She's gorgeous! She's enchanting! and so forth. Nothing is taken away, not even an atom. The original atoms have been coerced by chemistry into new arrangements giving the hair a new and enduring sinuosity." The editorial, written just about a year ago, would now seem to require some correction in the light of the fact that if not thioglycolic acid at least the hydrogen sulfide or some of the other chemicals associated with this process can be associated with severe allergic reactions in sensitive persons. The dosages of the materials concerned, the duration of exposure, the frequency of the exposure and many similar factors need study. The hair dressers and the employees of establishments in which the process is carried on constantly day after day are much more subject to the risk than the occasional user of materials purchased for application at home.

CONTINUATION COURSES FOR VETERAN AND CIVILIAN PHYSICIANS

The semiannual listing of postgraduate continuation courses for veteran and civilian physicians prepared by the Council on Medical Education and Hospitals of the American Medical Association appears elsewhere in this issue. These courses begin during the period July 1, 1946 to Jan. 15, 1947. They cover a wide range of subjects, are extensively distributed geographically and vary considerably in duration. The number of courses offered continues at the expanded level of the preceding six months period, with many more courses than were given in former years. Many of the new courses were organized primarily to meet the needs of veterans, although most are also open to other physicians. Seventy-nine institutions and organizations are represented in this listing, offering 558 courses, some of which are given more than once in the period covered. Forty-seven medical schools give 491 courses, practically 90 per cent of the total. Many of these are full time and extend for relatively long periods. This invaluable contribution by medical schools was made possible in many instances by the actions of the Army, Navy and Selective Service System, which permitted medical school deceleration and thus freed facilities and faculty members for utilization in this manner. The usefulness of this listing is apparent from the demand for reprints, in addition to the wide distribution effected by the regular publication in THE JOURNAL. Requests for reprints are received at the rate of about one hundred and fifty a week, which is several times the number requested before the war. Institutions and individuals participating in these programs are rendering a great service to the returning medical officers. THE JOURNAL and the Council are indebted to them for making these listings possible.

VITAMIN E AND HEART DISEASE

Announcement in newspapers and particularly in *Time* that large doses of vitamin E will bring relief from all common forms of heart disease once again prompts discussion of the manner in which the results of medical research should be brought to the attention of the public. Far too often of late there has been overemphasis in the popular press on research too fresh from the laboratory and too inadequate as to evidence to permit evaluation. The reported discovery of new and almost miraculous powers of vitamin E needs careful evaluation and confirmation because the substance had already been investigated by many competent clinicians and found wanting. Nothing in the known pharmacologic actions of vitamin E would lead one to suspect either a vasodilating action, a myotonic effect or an ability to repair damaged heart muscle in human beings.

MEDICINE AND THE WAR

NAVY

NAVY AWARDS AND COMMENDATIONS

Captain William Edward Eaton

Capt. William Edward Eaton, Washington, D. C., was recently awarded the Legion of Merit "for exceptionally meritorious conduct in the performance of outstanding services to the government of the United States as medical officer in command of the United States Naval Hospital, Great Lakes, Ill., during the early part of World War II. Displaying exceptional initiative, judgment and professional ability," said the citation, "Captain Eaton expertly administered the activities of his command in treating the sick and handling epidemics in this institution and throughout the Ninth Naval District and was in a large measure responsible for the expeditious return to duty of a large number of patients. In addition, he directed the establishment of a hospital corps school which trained thousands of hospital corpsmen, including Waves, to meet the needs of the rapidly expanding Navy, and conscientious devotion to the varied and complex details of his assignment reflect the highest credit on Captain Eaton and the United States Naval Service." Dr. Eaton graduated from Harvard Medical School, Boston, in 1905 and entered the service Oct. 15, 1910. He is now on duty at the Navy Department, serving as a member of the Board to Revise Navy Regulations.

Lieutenant Commander John P. Martin

Lieut. Comdr. John P. Martin, Camden, Del., recently received a commendation from Fleet Admiral Chester W. Nimitz, commander-in-chief of the U. S. Pacific fleet, the citation reading "For meritorious conduct while participating in aerial flights as flight surgeon of Carrier Air Group Twelve, attached to the U. S. S. *Saratoga* from Jan. 31 to Feb. 11, 1944. In order to obtain a better understanding of pilot fatigue under actual combat conditions, Lieutenant Commander Martin requested permission to take part in strikes against the enemy. Permission was granted and he subsequently took part in five separate overwater strikes against enemy installations on Eniwetok Atoll. Through his outstanding desire to improve his professional knowledge, and courage in accompanying the air crew on these hazardous missions beyond the requirements of his naval status, he contributed materially to the physical and mental welfare of the pilots and the successful operations of Carrier Air Group Twelve. His courageous conduct and devotion to duty were at all times in keeping with the highest traditions of the United States Naval Service." Dr. Martin graduated from New York University College of Medicine, New York, in 1932 and entered the service March 17, 1941.

Commodore Carlton L. Andrus

Commodore Carlton L. Andrus, Arlington, Va., was recently awarded the Legion of Merit "for exceptionally meritorious conduct in the performance of outstanding services to the government of the United States as officer in charge of the War Plans Division, Bureau of Medicine and Surgery, throughout World War II." The citation accompanying the award continued: "Qualified for his work by thorough experience in hospital construction, Commodore Andrus rendered invaluable service in expanding the Navy's major medical facilities from sixteen hospitals to sixty and in providing an adequate number of general, special and convalescent hospital beds to insure the highest standard of care for personnel of the Navy, Marine Corps and Coast Guard. His skill and initiative were essential factors in developing our mobile, Fleet, evacuation and base hospitals and in improving the design of medical and surgical facilities and professional ability. Commodore Andrus contributed to the success of our country's war effort and upheld the highest traditions of the United States Naval Service." Dr. Andrus graduated from Stanford University School of Medicine, San Francisco, in 1917 and entered the service Jan. 1, 1918.

Commander George H. O'Kane

Comdr. George H. O'Kane, New York, was recently awarded a special commendation ribbon for service with the Pacific Fleet. Accompanying the award was a citation reading "For meritorious service in the line of his profession as surgeon and specialist aboard the United States Hospital Ship *Solace* from Nov. 21, 1944 to Sept. 1, 1945. Commander O'Kane displayed outstanding ability and sincerity of purpose in caring for the sick and wounded and contributed directly toward saving many lives and alleviating suffering. His professional excellence, mature judgment and devotion to duty were material contributing factors in the successful prosecution of the war against the Japanese Empire and were in keeping with the highest traditions of the United States Naval Service." Dr. O'Kane graduated from the University of Rochester School of Medicine and Dentistry in 1931 and entered the service April 6, 1942.

Rear Admiral Benjamin H. Dorsey

Rear Admiral Benjamin H. Dorsey, U. S. Navy, retired, Washington, D. C., was recently presented with the Legion of Merit "for exceptionally meritorious conduct in the performance of outstanding services to the government of the United States as president of the Navy Retirement Board and president of the Board of Medical Examiners of the Navy, prior to and during World War II. Demonstrating a thorough understanding of critical problems," continued the citation, "Rear Admiral Dorsey was personally responsible for the expeditious handling of medical examinations and retirements for the Navy. His medical competence, long naval experience and sound judgment were important factors in the successful prosecution of a task of great magnitude and importance to the United States Navy." Dr. Dorsey graduated from the University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, in 1901 and entered the service March 13, 1903.

MISCELLANEOUS

BETTER PROSTHETIC DEVICES NEEDED

Dr. Paul E. Klopsteg, chairman of the Committee on Prosthetic Devices, recently urged inventors and engineers of artificial limbs to submit ideas and suggestions for better prosthetic devices to the National Inventors Council, Department of Commerce, Washington, D. C., for analysis and screening. He stressed the urgent needs of 17,000 war amputees and an estimated annual minimum of 25,000 civilian amputees.

The Committee on Prosthetic Devices was set up in April 1945 under the sponsorship of the National Research Council of the Office of Scientific and Research Development. Consisting of three orthopedic surgeons and three engineers, the committee initiates, supervises and lends financial support to research institutes and laboratories willing to undertake special research problems for improving prosthetic devices. Members of the committee have prepared a report especially for engineers and investors, summarizing its work over the past year and analyzing problems as yet unsolved. A mimeographed copy of the report will be mailed free of charge on request to the National Inventors Council.

The National Inventors Council is cooperating with the committee by soliciting and screening ideas, suggestions and inventions for improving prosthetic devices. Proposals submitted to the council by engineers and inventors are carefully analyzed. If found meritorious, they will be forwarded to the Committee on Prosthetic Devices for further investigation and development. Such proposals should be addressed to John C. Green, Chief Engineer, National Inventors Council, Department of Commerce, Washington, D. C.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Anderson, Henry L.....Sellers
Barnes, Everett B. Jr.....Gallion
Cain, Elisha J.....Wetumpka
Campbell, Thomas M. Jr.....Tuskegee
Davis, Luther Jr.....Tuscaloosa
Dwiggins, Horace G.....Tuskegee
Hargis, Albert S. Jr.....Birmingham
Harris, William M. Jr.....Birmingham
Huber, Henry S.....Jacksonville
Melton, Thomas A.....Atmore
Taylor, Junius LaFayette.....Tuskegee
Underwood, James W.....Birmingham
Walker, Howard S. J. Jr.....Mobile

Arizona

Brock, Ernest.....Yucca
Brown, Preston T.....Phoenix
Koerber, Frederick L.....Ajo

Arkansas

Aday, John L.....Little Rock
Boydstone, Joseph O.....Little Rock
Cox, Vincent M.....Huttig
Thomas, Sherman A.....Little Rock

California

Abbey, John D.....Los Angeles
Adams, Pliny A.....San Diego
Atkinson, Russell E.....San Bernardino
Baker, George L.....San Francisco
Bernstein, Theodore I.....Los Angeles
Birnbaum, Walter D.....San Francisco
Bodner, Henry.....Hollywood
Bruson, Solomon.....Los Angeles
Cole, Sidney S.....Santa Monica
Darnell, Clarence A.....Hollywood
Fish, Lester W.....Los Angeles
Fletcher, Elmer G.....Oakland
Fox, Saul L.....Los Angeles
Gericke, Otto L.....Talmage
Gratiot, Charles C.....Monterey
Grau, Eugene C.....Niles
Griffin, Richard A.....North Hollywood
Guinney, Francis E.....Los Angeles
Hansen, Robert McC.....Fresno
Hiatt, Nathan S.....Hollywood
Holcomb, Donald G.....Santa Barbara
Hull, Earl T. Jr.....Los Angeles
Imerman, Carlyle P.....Los Angeles
Jonas, Carl H.....Riverside
Kapstein, John A.....San Francisco
Kirby, Frederick G.....Los Angeles
Levy, Edward I.....San Diego
Lindsay, Charles V.....Encinitas
Lipson, Morris.....Van Nuys
Lowry, Milton L.....West Los Angeles
McChesney, Paul.....Berkeley
McDonald, Frank J.....Bakersfield
McGehee, William H.....Fresno
Maguire, Joseph M.....San Diego
Manchester, Raymond D.....Wilmington
Mandel, Jacob H.....San Gabriel
Mannerstedt, Gordon O.....Oakland
Marcus, Simson.....Los Angeles
Meehan, Carl W.....Sacramento
Mendelsohn, Howard A.....Los Angeles
Mundall, Bernard P.....Glendale
Nichols, Jack.....Los Angeles
O'Reilly, Francis F.....San Luis Obispo
Pallette, Edward C.....Los Angeles
Pattison, Arthur C.....Pasadena
Popkin, Roy J.....Los Angeles
Roe, Harold E.....Berkeley
Roehm, Edgar A.....Los Angeles
Rosenthal, Milton.....San Francisco
Rossi, George J.....San Francisco
Rudy, Lester H.....Los Angeles
Rutherford, Findlay de Paul.....San Jose
Salomon, Werner.....Los Angeles
Sands, Robert L.....Santa Monica
Savage, Philip M. Jr.....San Bernardino

California—Continued

Schaeffer, R. C.....Palos Verdes Estates
Schmidt, Philipp E.....Glendale
Spungin, Seymour A.....Wilmington
Stone, Vean M.....San Francisco
Strauss, Ludwig.....Los Angeles
Swingle, Kenneth R.....Los Angeles
Vogel, Philip.....San Francisco
Wagner, Claude F.....Gilroy
Wallace, Arthur F.....Sacramento
Waller, Lorenz McB.....Hollywood
Ware, Edward R.....Los Angeles
Westdahl, Philip R.....San Francisco
Whitson, Claude S.....Los Angeles
Williams, Gordon F.....San Francisco
Willson, Julius L.....Santa Barbara
Winkler, David P.....Los Angeles
Young, Frank W.....Patton
Zahry, Ney J.....Bakersfield

Colorado

Adams, Francis S.....Pueblo
Akers, David R.....Alamosa
Billings, Edward G.....Denver
Haun, Paul.....Denver
Johnston, Walter S.....Pueblo
Kitto, William.....Denver
Mery, Albert M.....Denver
Perrin, James B.....Denver
Stidham, Paul B.....Denver
Weinstein, Louis J.....Denver
Wirz, Melvin J.....Denver

Connecticut

Anderson, Clifton W.....Greenwich
Andrews, Egbert M.....Hartford
Goergen, William P.....Danbury
Grady, Joseph F.....Stamford
Jaffe, Samuel A.....New Haven
Markoff, Abraham.....New Haven
Reynolds, Whitman M.....Greenwich
Rosen, Samuel R.....Greenwich
Shupis, Anthony.....Hartford
Stewart, Lester Q.....West Hartford
Sundquist, Alfred B.....Manchester
Thompson, Bob F.....New Haven

Delaware

Slovin, Isadore.....Wilmington
Wilson, Arthur H.....Hartford
Zaur, Israel S.....Bridgeport

District of Columbia

Albert, Arnold.....Washington
April, Ellis.....Washington
Coprew, Theodore E.....Washington
Danish, Abraham W.....Washington
Fong, Theodore C. C.....Washington
Footer, Marvin P.....Washington
Gray, James C.....Washington
Herzmark, Maurice H.....Washington
McClintock, James K. Jr.....Washington
Manning, Wilkins R. Jr.....Washington
Maret, Raymond.....Washington
Mendelsohn, Matthew.....Washington
Passarelli, Arthur F.....Washington
Rapee, Lawrence A.....Washington
Reed, Paul A.....Washington
Stevens, Rutherford B. Jr.....Washington
Wallace, Joseph J.....Washington
Zappala, Anthony.....Washington

Florida

Barreras, Luis A.....Tampa
Lancaster, Lamar L.....Bartow
Messner, Paul O.....Miami Springs
Michaels, John P.....Orlando
Nolan, Lewis E.....St. Petersburg
Roush, Franklin W. Jr.....St. Petersburg
Shell, Paul G.....Ft. Lauderdale
West, John R.....Daytona Beach

Georgia

Agnor, Elbert B.....Atlanta
Arteaga, Oliver.....Atlanta
Baxley, Warren C.....Macon
Boling, Edgar.....Atlanta
Peters, James S. Jr.....Manchester
Suran, Roland R.....Columbus
Yates, Theodore M.....Augusta

Idaho

Smith, Marvin C.....Idaho Falls
Soltman, Donald J.....Grangeville
Terhune, Charles A.....Burley
Van Sicklin, Roy.....Weiser

Illinois

Adams, Eli L.....Chicago
Albrecht, Armand D.....Chicago
Aronson, Howard G.....Chicago
Barton, Edwin G.....Streator
Benner, William H.....Chicago
Best, Robert B.....Paris
Bouyer, Harsba F.....Chicago
Brown, Harry E.....Highland Park
Cameron, William G.....Chicago
Cammerer, Herbert R.....Chicago
Czaja, Zenon G.....Chicago
Dietrich, Edwin F.....Fithian
Dobin, Norman B.....Chicago
Eisenstein, Milton W.....Chicago
Fischnaller, Joseph E.....Chicago
Friedman, Seymour W.....Forest Park
Goodman, Maurice.....Chicago
Greco, Vincent J.....Chicago
Handelman, Eugene V.....Chicago
Hinton, Clarence D.....Chicago
Kahn, Morton R.....Chicago
Kuman, Stanley J.....Chicago
Leader, Abel J.....Chicago
Levine, Edward J.....Chicago
Lewis, Henry M.....Chicago
Lewis, Louis L.....Peoria
Lipnik, Benjamin P.....Chicago
Lipton, Saul I.....Orion
McDonald, Owen G.....Chicago
Madden, James D.....Chicago
Maloney, John E.....Franklin Park
Marks, Arthur R.....Chicago
Marshall, Glenn R.....Effingham
O'Brien, Thomas V.....Chicago
Olechowski, Henry C. I.....Chicago
Oleck, Henry T.....Chicago
Orloff, Morris P.....Chicago
Papierniak, Frank B.....Chicago
Paul, Tom D.....Evanston
Pfeiffer, Carl F. H.....Quincy
Pister, Max.....Chicago
Purvey, John C.....Crystal Lake
Rattenne, E.....Chicago
Ravenna, Paolo.....Chicago
Richmond, Julius B.....Chicago
Rink, Richard A.....Beardstown
Rose, William F.....Dupo
Rosenblum, Samuel S.....Centralia
Roth, Harold A.....Chicago
Schreiber, Manuel.....Chicago
Sehring, George H.....Joliet
Sitney, Julian J.....Chicago
Steinberg, Milton.....Chicago
Steiniche, Aage.....Dwight
Stephens, Jerry H.....Centralia
Tobin, John R. Jr.....Elgin
Vesely, Harry C.....Peoria
Vial, Alexander B.....LaGrange
Wagner, Merrill W.....River Forest
Wakefield, William J.....River Forest
Wall, Emmett D.....Chicago
Walvoord, Carl A.....South Holland
Warner, Frank B. Jr.....Chicago
Warren, Irving A.....Chicago
Weisbach, Philip T. Jr.....Chicago

PHYSICIANS SEPARATED FROM SERVICE

Illinois—Continued

Werch, Solomon C.....Chicago
Whitehead, Ira C.....Lockport
Williams, Alfred F.....Latham
Wolf, Abraham A.....Chicago
Wuesteman, Adelbert E.....Chicago
Wyness, John A.....Springfield
Yaffe, Bernard.....Chicago
Youngerman, William M.....Champaign
Zimmerman, Harold W.....Chicago
Zimring, Allan J.....Chicago
Zolt, Nathan.....Chicago

Indiana

Berkebile, John B.....Peru
Brady, Thomas A.....Indianapolis
Brown, Marcel S.....Spencer
Calvy, William J.....Winchester
Chambers, Alan R.....Ft. Wayne
Compton, Walter A.....Elkhart
Eisaman, Jack L.....Bluffton
Fleetwood, Raymond A.....Nappanee
Grandstaff, Floyd LeLand.....Decatur
Humphreys, John W.....Darlington
Lundt, Milo O.....Elkhart
McQuiston, Ralph J.....Indianapolis
Masters, John M.....Indianapolis
Nie, Louis W.....Indianapolis
Pancost, Vernon K.....Elkhart
Pekarek, Edward A.....Whiting
Renbarger, Lester L.....Marion
Rogers, Lloyd S.....North Manchester
Sandock, Louis F.....South Bend
Smith, David J.....Indianapolis
Stauffer, George E.....Elkhart
Streepey, Jefferson I.....New Albany
Terrill, Richard W.....Lawrenceburg
Warren, Carroll B.....Marshall
Wohlfeld, Julius B.....Indianapolis
York, Dale E.....Bloomington
Zimmer, Henry J.....Mishawaka

Iowa

Amesbury, Harry A.....Clinton
Angell, Charles A.....Des Moines
Arent, Asa S.....Humboldt
Bone, Harold C.....Des Moines
Brentan, Emanuel.....Ottumwa
Byrnes, Clement W.....Dunlap
Hayne, Willard W.....Paullina
Herrick, Richard B.....Ottumwa
McKee, Thomas L.....Keokuk
Miller, Jay R.....Wellman
Minkel, Roger M.....Ft. Dodge
Montgomery, Albert E...Valley Junction
Mullmann, Arnold J.....Adel
Rhodes, John M.....Ft. Dodge
Sorensen, Elmer M.....Red Oak
Toubes, Abraham A.....Des Moines
Updegraff, Thomas R.....Boone
Watters, Vernon G. Jr.....Iowa City
Worley, Joseph P.....Indianapolis

Kansas

Baird, Albert C.....Parsons
Beauchamp, Preston E.....Sterling
Brown, Virgil E.....Sabetha
Bynum, Frank L.....Emporia
Fritzemeier, William H.....Wichita
Hall, Millard W.....Wichita
Hostetter, Philip H.....Wichita
Palmer, Harold W.....Wichita
Rost, Glenn S.....Halstead

Kentucky

Alexander, Alexander J.....Lexington
Alley, Rufus C.....Lexington
Berg, Harold F.....Shively
Bernhard, Charles M.....Louisville
Buschemeyer, William C.....Louisville
Hagood, William J.....Corbin
Leatherman, Kenton D.....Louisville
Long, Robert C.....Louisville
McAtee, Ott B.....Stanford

Kentucky—Continued

McLain, Ernest K.....Lexington
Moore, Escum L.....Lexington
Thompson, William R. Jr.....Lexington
Wallace, Jay F. Jr.....Louisville

Louisiana

Alessi, Carlos D.....Hammond
De Priest, Frederick E.....Shreveport
Duhe, Henry M.....New Orleans
Jones, Kenneth B.....Shreveport
La Nasa, Matthew J.....Baton Rouge
Martin, Murphy P.....St. Martinsville
Packer, James M.....Alexandria
Prince, Kenneth C.....Shreveport
Scarle, Marshall M.....Amite

Maine

Holland, Edward W.....Sanford
Laughlin, Kenneth A.....Portland
Ottum, Alvin E.....Portland
Semetauskis, Stephen W.....Lewiston
Torrey, Marcus A.....Ellsworth

Maryland

Ascher, Eduard.....Baltimore
Coughlan, Stuart G.....Baltimore
Crawford, Robert C.....Baltimore
Drozd, Joseph.....Baltimore
Dugan, Thomas J. Jr.....Laurel
Friedman, Joseph.....Westernport
Gibson, Walcutt W.....Takoma Park
Glass, Albert J.....Baltimore
Goodwin, Thomas C.....Garrison
Granoff, Hyman L.....Baltimore
Gross, Joseph B.....Baltimore
Hutchins, Thomas M.....Cantonsville
Larkey, Sanford V.....Baltimore
Mance, Andrew E.....Oakland
Padget, Paul.....Baltimore
Richardson, Charles Jr.....Bel Air
Ross, James K.....Salisbury
Waite, Merton T.....Odenton
Warner, Frank A.....Baltimore
Worsley, Thomas L. Jr.....Baltimore

Massachusetts

Antonellis, Carl J.....Medford
Arenstam, Jacob J.....Russell
Auletta, Louis A.....Medford
Awramik, Stanley M.....Lynn
Bucholz, Donald J.....Boston
Carr, Edward C.....Somerville
Cass, Leo J.....Brookline
Desrochers, Bernard C.....Adams
Duserick, William G.....South Boston
Eidam, Carl L.....Lawrence
Fawcett, Don W.....Newton
Frumson, Solomon L.....Millville
Kagan, Leon H.....Springfield
Krans, DeHart.....Taunton
Listernick, Sidney S.....Everett
Litter, Julius.....Brighton
Mac Donald, Milton T.....New Bedford
Murphy, John J.....Westfield
Newlander, Harold.....Malden
Orlov, Samuel.....Wareham
Perkins, William L.....Brighton
Portman, Harry.....Malden
Ravin, Iver S.....Brookline
Rhu, Hermann S. Jr.....Boston
Richer, Arthur G.....Marlboro
Servetnick, Abraham.....Haverhill
Shahon, Henry I.....Roxbury
Swann, William K. Jr.....Belmont
Weisman, William S.....Mattapan
Wheeler, Charles A.....Leominster
White, Hilary F.....Fall River
Wilker, Sidney R.....Roxbury
Wise, Herman R.....Hyde Park
Woodcome, Harold A.....Attleboro
Woodworth, Clyde R.....Beverly
York, Richard F....Newton Upper Falls

Michigan

Ale, William T.....Detroit
Anthony, George E.....Flint
Bateman, Lawrence G.....Flint
Belisle, John A.....Detroit
Britton, George T.....Detroit
Bruce, William W.....Swartz Creek
Carstens, Henry R.....Detroit
Carter, Harold G.....Detroit
Croll, L. J.....Detroit
Crowley, Robert T.....Detroit
Fee, Manson G.....Grand Rapids
Hammer, John M.....Kalamazoo
Hammer, Raymond W.....Detroit
Hanelin, Henry A.....Marquette
Heideman, Louis E.....Detroit
Hodgkinson, Charles P.....Detroit
Inman, John C.....Lake City
Kinde, Matthew R.....Battle Creek
Levy, Joseph.....Battle Creek
Linden, Victor E.....Durand
Lowe, Adolf W.....Detroit
McCullough, Francis E.....Detroit
McKean, George T.....Detroit
McKnight, Edwin R.....Owosso
Marston, Leo L.....Lakeview
Miller, Spencer W.....Alma
Mogill, George.....Detroit
Peck, M. E.....Parchment (Kalamazoo)
Pugsley, George W. Jr.....Detroit
Richards, Ned W.....Saginaw
Sonnemann, Carl O.....St. Joseph
Southworth, Maynard N.....Schoolcraft
Sullenberger, Neil H.....Detroit
Swartz, Frederick C.....East Lansing
Winebrenner, John D.....Ann Arbor

Minnesota

Alcorn, William J.....Minneapolis
Anderson, Warren R.....Cambridge
Berkwitz, Nathaniel J.....Minneapolis
Clough, David M.....Minneapolis
Field, Anthony H.....Farmington
Goldner, Meyer Z.....Minneapolis
Kapernick, John S.....Rochester
Kucera, Lad J.....Lonsdale
Leuther, Peter A.....Mankato
Litman, Abraham B.....Minneapolis
Lovelace, William R.....Rochester
Lundblad, Stanley W.....Minneapolis
Nesheim, Martin O.....Emmons
Remington, John P.....St. Paul
Schleinitz, Fritz B.....Battle Lake
Zagaria, James F.....St. Paul

Mississippi

Berman, Maxwell D.....Jackson
Chustz, James A.....Jackson
Hull, Joseph A.....Indianola
Lilienthal, Allen A.....Sanatorium
Mabry, Edward H.....Greenville
Parker, Ellis D.....Laurel
Peeler, Joseph G.....Shaw
Sawyer, James G.....Biloxi
Tatum, Frank K.....Tupelo
Verner, Guy C.....Jackson
Warfield, William P.....Clarksdale
Wilson, David T.....Louisville
Wilson, Jack K.....Money

Missouri

Ahrens, John H.....St. Louis
Allen, Lee G.....St. Louis
Barnett, Gordon P.....Kansas City
Bortnick, Arthur R.....St. Louis
Critchlow, William C.....Matthews
Elkins, Ronald F.....Springfield
Flynn, George T.....St. Louis
Gottlieb, Leo.....University City
Jaffe, Bernard.....Excelsior Springs
Martin, Aretus D.....Sikeston
Martini, Arthur P.....St. Louis
Morgan, Clarence E.....Kansas City
Mueller, Joseph A. Jr.....St. Louis
Rowlette, Avery P.....St. Louis

PHYSICIANS SEPARATED FROM SERVICE

Missouri—Continued

Sheldon, John.....Kansas City
Skaggs, Thomas R.....St. Louis
Slee, Vergil N.....St. Louis
Stephens, LeRoy J.....St. Louis
Sweet, Herbert C.....Koch
Unger, Harold.....Kansas City
Wasserman, Helman C.....St. Louis
Wensley, John E.....Harrisonville
Williams, George D.....St. Louis
Williams, John W.....Oak Grove
Williams, Oliver B.....Kansas City
Zellermayer, J.....Kansas City

Montana

Kroeze, Robert G.....Butte
Power, Harry W.....Conrad
Tichenor, Ernest LaPoint.....Harlem
Vogel, Jesse.....Dixon
Weber, Richard D.....Missoula

Nebraska

Elias, Houghton F.....Beatrice
Green, Carl R.....Niobrara
Hansen, Theodore M.....Omaha
Nelson, Floyd C.....Omaha
Rathbun, Sanford Mac A.....Beatrice
Thompson, Lloyd L.....West Point
Weber, Clarence R.....Hastings

Nevada

Fightlin, Harry E.....Reno

New Jersey

Addesa, Albert J.....Depew
Atkinson, John M.....Madison
Bernhard, Joel A.....East Orange
Brodkin, Louis A.....Irvington
Broselow, Benjamin G.....Franklinville
Cartnick, Edward N.....Wood Ridge
Chaiken, Louis H.....Elizabeth
Christian, Henry A.....Jersey City
Connell, William F.....Linden
Cortese, Joseph T.....Newark
Crandell, Charles A.....Greystone Park
Griffey, William C.....Westmont
Grundfest, Philip.....Kearny
Haldeman, Robert E.....Mount Holly
Horwitz, Harry L.....West New York
Keating, Joseph M.....Passaic
Kooperstein, Samuel I.....Jersey City
Luddecke, Hugh F.....Morristown
McCall, Jesse.....Newton
Macaluso, Dominic C.....Belleville
Marshall, Irving.....Trenton
Maxwell, Carl A.....Hackettstown
Miller, Theodore R.....Ridgewood
Offenkrantz, Frederick M.....Newark
Patton, Paul B.....Blairstown
Pleasants, Edward N.....Marlboro
Puller, Herbert I.....Roselle
Reinhorn, Abraham J.....Paterson
Relyea, George McD.....Summit
Rosenberg, Marvin P.....Passaic
Rudolph, John P.....Merchantville
Stephenson, Daniel H.....Camden
Stybel, Joseph.....Plainfield
Ulvestad, Lawrence E.....East Orange
Vanderbeck, James J.....Paterson
Vento, Sebastian J.....Trenton
Vincent, Nicholas F.....East Orange
Wakeley, William E. Jr...South Orange
Weiner, Harry S.....East Orange
Weintrob, Joseph.....Atlantic City
Weiss, Fred.....Newark
Westerhoff, Peter D.....Midland Park
Willner, Philip.....Newark
Woodhall, Jerry P.....Jersey City
Zimmerman, Coler.....East Orange

New Mexico

Goodman, Sylvan C.....Albuquerque
Marbry, George W.....Ft. Bayard
Sax, Max T.....Albuquerque
Trostler, Lewis S.....Albuquerque

New York

Abrams, Murray.....Brooklyn
Adler, Samuel S.....Forest Hills
Aisenson, Milton R.....Brooklyn
Appelbaum, Henry.....Bronx
Apostle, Demetrius K.....Brooklyn
Aronowitz, Isadore.....Bronx
Badler, Leon.....Bronx
Beacher, Abraham I.....Brooklyn
Belkowitz, Samuel.....Dewitt
Biondo, T.....Freeport, L. I.
Blackwell, Richard C.....New York
Bloome, Leonard J.....Brooklyn
Boroff, Alexander.....Bronx
Bowman, Hugh L.....Albany
Bradley, Daniel J.....Amityville
Brandstein, Edward.....Brooklyn
Breindel, Abraham M.....Bronx
Brown, John B.....Union Springs
Cannon, Edward R.....Oneida
Casale, Walter.....Brooklyn
Cheim, Erwin.....Brooklyn
Cohen, Abraham.....Brooklyn
Cohn, Harold.....Brooklyn
Cole, Joseph G.....Mt. Vernon
Dale, Maxwell H.....New York
Davidoff, Eugene.....Syracuse
Del Monte, George A.....Hudson Falls
Dick, Herman J.....Syracuse
Dolan, Gerald J.....Richmond Hill
Donatelli, Charles.....Buffalo
Dvoretz, David A.....Brooklyn
Eckstein, Albert.....Staten Island
Ellsworth, Carl L.....Madison
Epstein, Harry H.....Bronx
Ferber, Samuel J.....New York
Fisher, Alfred J.....Jamaica, L. I.
Fogel, David H.....Brooklyn
Fond, Morris S.....Bronx
Francis, Edwin H.....Maspeth
Frank, Mortimer.....Bronx
Franklin, Paul F.....Brooklyn
Franklin, Roy W.....New York
Fred, Leo.....Brooklyn
Freund, Sidney C.....Brooklyn
Friedlander, Jackson H.....Brooklyn
Gentile, Lucian F.....Brooklyn
Getzoff, Paul L.....Brooklyn
Gilman, Howard.....New York
Glennie, Robert D. Jr.....Tonawanda
Glueck, Bernard C. Jr.....Ossining
Goldenkranz, Max M.....Brooklyn
Gordon, Isadore.....Bronx
Greenfield, Nathaniel L.....New York
Gruskin, Harry.....Brooklyn
Hayes, Willard N.....Rochester
Heffner, Reid R.....New Rochelle
Henderson, Robert A.....Melone
Horwitz, Seymour A.....Schenectady
Hourigan, John J.....Oswego
Hurewitz, Morton M.....Brooklyn
Ireland, Treadwell L.....Brooklyn
Jennings, Walter F.....Fishkill
Kahn, Kenneth M.....New York
Kaicher, John J.....Glendale
Kennedy, Robert H.....New York
Klein, Samuel H.....New York
Kosmaler, Charles H.....Elmira
Kroin, Harry E.....Brooklyn
Lachterman, Alfred.....Brooklyn
Lampert, Jacob I.....Buffalo
Lanzillo, James L.....Troy
Lau, Kimm C, K.....New York
Leban, Jesse J.....Brooklyn
Le Bell, Irving.....New York
Levin, Grant.....New York
Lipton, Benjamin.....Bath
Lipton, Maxwell.....Long Island City
Litinsky, Henry.....New Dorp
Littenberg, Samuel H.....Florida
Loomis, Willard A. Jr.....Baldwinsville
Lostfogel, L.....Brooklyn
McCulla, Francis J.....Jamestown

New York—Continued

McWilliam, C. S.....Newburgh
Mackie, Thomas T.....New York
MacLeod, Norman W.....New York
Madoff, Irving.....New York
Malcewicz, John R.....Utica
Manley, Wilber J.....New York
Markowitz, Benjamin F.....Albany
Maybarduk, Alexander P.....New York
Mayer, Victor.....Brooklyn
Mirapaul, Sylvern.....Oriskany
Morrissett, Leslie E.....New York
Morse, Sidney.....Bronx
Oddo, Dominick C.....Flushing
Pardee, Myron L.....Fredonia
Peeler, Daniel B.....Rochester
Pennington, Glenn W.....New York
Piazza, Thomas L.....Glenmount
Pincus, Morris H.....Brooklyn
Pinsky, Abram.....Rochester
Pollard, William E.....New York
Pooler, Harold A.....Binghamton
Pulcino, Michael E.....Rochester
Raben, Maurice S.....Port Chester
Rakieten, Morris L.....Brooklyn
Richards, Gomer.....Schenectady
Rizzuto, Michael P.....Endicott
Robinson, Milton I.....Brooklyn
Roche, John R.....Brooklyn
Rose, Anthony T.....New York
Rosenberg, Benjamin.....Brooklyn
Rosenthal, Julius.....Flushing
Rosenthal, Keeve.....Bronx
Rosenzweig, Joseph.....Brooklyn
Rosner, Francis.....Brooklyn
Rosner, Samuel.....Freeport
Rozendaal, Hendrik M.....Schenectady
St. John, Elmer G.....Schenectady
Sachs, Nathan H.....Bronx
Salan, Irving.....Orangeburg
Salpeter, Burton F.....Rockaway Park
Salzman, Carl C.....New York
Samis, Sidney M.....New York
Samuels, Nathan.....Brooklyn
Schneiderman, J.....Brooklyn
Schwartz, Max.....Rosedale
Scott, William D.....Freeport
Shea, William I.....New York
Sheldon, Paul B.....New York
Shepard, John W.....New York
Sherman, Milton H.....Brooklyn
Sherman, Samuel.....Bronx
Siegner, Allan W.....Buffalo
Singer, Milton.....New York
Slapion, Lawrence G.....Bronx
Smiley, Douglas G.....Bronx
Smith, Carl B.....Victor
Smith, Morris K.....New York
Smith, Wallace T.....East Rockaway
Soble, Ellis B.....Rochester
Solms, Charles.....Monticello
Spielberg, Morris.....Brooklyn
Stern, Arthur B.....Brooklyn
Stich, Melvin H.....New York
Stritzler, Conrad.....Jamaica
Sweet, Willard H. Jr.....Peekskill
Tanz, Stanley S.....New Rochelle
Testa, Nicholas D.....New York
Thompson, Alexander F.....New York
Traver, Ralph F.....Albany
Urie, Murray G.....New York
Urstein, Harry.....Brooklyn
Van Amberg, Robert J.....White Plains
Vinicor, H.....Norwood
Vivona, James I.....Brooklyn
Vogt, Walter E.....Jamaica
Volk, Benjamin M.....Albany
Vomacka, Henry J.....New York
Von Salzen, Charles F.....Camp Upton
Wagner, Aaron.....Buffalo
Warren, Harold D.....Brooklyn
Weary, Willard B.....Flushing, L. I.
Webb, Hamilton B.....New York

PHYSICIANS SEPARATED FROM SERVICE

New York—Continued

Weber, Mortimer W.....New York
Weinberg, Arthur A.....Brooklyn
Werner, William.....New York
Wexler, Henry.....New York
Wharton, Raeburn J.....Johnson City
Winn, James S.....New York
Witt, Francis L.....Brooklyn
Woolner, William R.....New York
Yannelli, Frank V.....Baldwin
Zahn, Benjamin L.....Brooklyn
Zawadzki, Sigmund A.....Buffalo
Zierler, Kenneth L.....New York

North Carolina

Andes, Thomas E.....Leaksville
Benzing, William M. Jr.....Asheville
Crough, Auley McRae Jr....Wilmington
Grant, Henry B.....Garysburg
Newbern, Walter R.....Statesville
Spencer, Benjamin D.....Charlotte
Way, John E.....Beaufort
Weathers, Ralph O.....Goldsboro
Westcott, William E.....Asheville
Whicker, Max E.....China Grove
Wilkins, Samuel A. Jr.....Dallas
Williams, Charles F.....Raleigh
Woods, James B. Jr.....Davidson

Oklahoma

Bradshaw, John O.....Welch
Felts, Clifton.....Seminole
Gordon, Minor E.....Claremore
Lattimore, Frank C.....Kingfisher
Lee, Judah K.....Tulsa
Lingenfelter, Paul B.....Clinton
Rippy, Orville M.....Seminole
Ross, George T.....Enid
Strecker, William E.....Oklahoma City
Thompson, Oliver H.....Tulsa
White, Eric McLain.....Tulsa

Oregon

Abrams, Edward W.....Portland
Allen, Roland.....Portland
Biswell, Roger Jr.....Baker
Browning, Charles W.....Portland
Grorud, Palmer R.....Portland
Jacobson, Leonard D.....Portland
Le Cocq, Frank Jr.....Portland
Lind, Laurie P.....Portland
Mathews, Thomas J.....Oregon City
Nerseth, Marvin.....Chiloquin
Rogers, Richard S.....Junction City
Snow, Eldon W.....Portland

Rhode Island

Beardsley, James M.....Providence
Bernasconi, Ezio J.....Providence
Campbell, Henry A.....Central Falls
Cardi, Alphonse R.....Cranston
Gaudet, Albert J.....Pawtucket
Gormly, John A.....Providence
Littleton, Thomas R.....Providence
Longo, Americo D.....Providence
Pritzker, Samuel.....Providence
Smith, Joseph.....Providence
Thompson, Edward R.....Pawtucket
Zucker, Joseph M.....Pawtucket

South Carolina

Baldwin, Wofford E.....Due West
Goforth, Augustus J. Jr.....Greenville
Poliakoff, Abraham E.....Abbeville
Stack, David R. Jr.....Charleston
Timberlake, Lloyd F.....Columbia
Wallace, William A.....Spartanburg
Wilson, Isaac R. Jr.....Charleston
Wilson, Lester A. Jr.....Pleasant

South Dakota

Clark, Bernard S.....Spearfish
Meyers, Walter W.....Colome
Nugent, Milton E. Jr.....Aberdeen

Tennessee

Atkinson, Edward R.....Clarksville
Ausherman, Howard M.....Chattanooga
Bennett, Hal E.....Troy
Buckley, Madison H.....Martin
Burem, Henry S.....Kingsport
Cate, Randolph A.....Nashville
Cates, Haynes B.....Newport
Copelan, Aubrey I.....Chattanooga
Creech, Robert W.....Memphis
Davidson, Sam P.....Nashville
Davis, David A.....Springfield
Day, Theodore P.....Knoxville
Gordon, Thomas G.....Fosterville
Guffee, Harry J.....Franklin
Halcomb, Francis J. Jr.....Nashville
Landrum, Orren B.....Dyersburg
Lassiter, James W.....Huntington
Lord, Jethro D.....Memphis
Lowry, Harvey McL.....Memphis
McCrarey, Augustus.....Chattanooga
McNabb, John T.....Whitwell
Maury, William Poston Jr.....Memphis
Mettetal, Ray W.....Johnson City
Migdoll, David.....Memphis
Mortland, Stewart R.....Nashville
Moulder, Max K.....Nashville
Patterson, Robert F. Jr.....Knoxville
Powers, John S. Jr.....Church Hill
Ruble, William C. Jr.....Newport
Shultz, Glen C.....Cosby
Steadman, Raymond A.....Kingsport
Trewhitt, Madison S.....Cleveland
Willien, Leon J.....Knoxville
Wyatt, George B.....Nashville
Zirkle, John G.....Greeneville

Texas

Altaras, Leon M.....Cleburne
Althaus, John W. A.....Ft. Worth
Bennett, Noel T.....San Augustine
Bourdon, Evan C.....Uvalde
Braden, Albert H.....Houston
Brown, James M.....Marlin
Bush, Walter H.....Dallas
Byars, Perry J. C. Jr.....Lampasas
Cantrell, William H.....Van Alstyne
Cappleman, William P.....Honey Grove
Carrington, Dewitte C.....Marquez
Casey, John B.....McAllen
Connally, Herschel F. Jr.....Waco
Cooper, William H.....McCamey
Cox, Joseph M.....Denton
Dornak, Franklin K.....Houston
Fenlaw, Joseph L.....Gilmer
Fish, John H.....Paducah
Gardner, Wray R.....El Paso
Gee, Kenneth J.....Tulia
Golenternek, Joe.....Tyler
Hall, Ewin P. Jr.....Fort Worth
Honea, Thomas C.....Cleburne
Hunt, Walter E.....Graham
Kaufman, Carl K.....Jasper
Lester, Stanley W.....Port Lavaca
Lightbody, Kenneth A.....Fort Worth
McClellan, William W.....Dallas
Mason, Porter K.....Dallas
Orman, Forrest C.....Houston
Phillips, Leon.....Houston
Poore, Alfred M.....Waco
Salley, Colvin W.....Baytown
Standifer, Lilburn E.....Austin
Stevens, Robert B.....Beaumont
Stevens, Thomas H.....Sulphur Springs
Swearingen, Robert G.....Corpus Christi
Timmins, Oliver H. Jr.....San Antonio
Wallace, Henry G.....Borger
Watkins, Wirter P.....Lott
Wilborn, Sam W.....Austin
Woodfin, George S.....Paris
Worsham, John W.....San Antonio
Wysong, Charley E.....McKinney
Zeigler, Paul.....Shamrock
Zeritsky, Samuel A.....Legion

Utah

Crosbie, Robert R.....West Provo
Jenkins, Harold C.....Bingham Canyon
Meads, Garner B.....Salt Lake City
Stearns, Horace I.....Price
Whiting, Quinn A.....Price

Virginia

Ball, William L.....Richmond
Brown, Aaron W.....Pocahontas
Brown, James A. Jr.....Portsmouth
Carpenter, Earnest B.....Newport News
Corbell, Robert L. Jr.....Portsmouth
Fultz, George S. Jr.....Butterworth
Gorman, Cornelius E.....Lynchburg
Lieberman, Lewis.....Hampton
McConnell, Fredrick G.....Gate City
Porter, William O.....Roanoke
Portman, Harry J.....Roanoke
Stevens, John E. Jr.....Richmond
Sutherland, Archie R.....Clintwood
Tanner, Rondell H.....Kecoughtan
Todd, Martillus H.....Norfolk
Trivett, Wiley B. Jr.....Georges Fork
Trout, Hugh H. Jr.....Roanoke
Trout, Philip C.....Roanoke
Waddill, James F.....Norfolk
Williams, George H.....Petersburg
Wolfe, Garland H.....Abington

Washington

Bartels, Bernhardt B.....Tacoma
Beatty, Jesse J.....Walla Walla
Chew, Eric M.....Mercer Island
Ginn, William S.....Yakima
Keeler, Keith C.....Bremerton
Kemp, Charles E.....Tacoma
Keyes, Ralph S.....Walla Walla
McElroy, West G.....Seattle
MacMahon, Charles E.....Seattle
Meeske, John M.....Snohomish
Sherwood, Kenneth K.....Seattle
Tipler, Robert J.....North Bend
Weinstein, William.....Everett
Whitaker, John L.....Tacoma

West Virginia

Boiarsky, Julius L.....Charleston
Henry, Robert T.....Colfax
Pickett, Justus C.....Morgantown
Smith, Mendel W.....Bluefield
Strickland, Leonard N.....Strange Creek
Ward, Charles M.....Beckley

Wisconsin

Adland, Abe.....Milwaukee
Bachhuber, Alois M.....Kaukauna
Finer, George H.....Madison
Irwin, Robert S.....Milwaukee
Jelenchick, Erwin J.....Milwaukee
Jones, William E.....Madison
Kleiman, Aaron H.....Wood
Martin, Stevens J.....Viroqua
Pfeifer, Robert H.....Sheboygan
Polacheck, Walter S.....Milwaukee
Robinson, Francis J.....Madison
Schrank, Raymond E.....Waupun
Simpson, Reed M.....Sheboygan
Talbot, John R.....Marshfield
Tausend, Harold J.....Madison
Thomley, Miles W.....Blair
Wilson, Albert C.....Milwaukee

Scotland

Levack, Joseph G.....Glasgow

Tahiti

Posner, Sidney.....Schofield Baks.

ADDRESS UNKNOWN

Kalish, Walter B.

ORGANIZATION SECTION

Medical Legislation

MATERNAL AND CHILD WELFARE LEGISLATION

The Subcommittee on Aid to the Physically Handicapped, House Committee on Labor, recently held hearings on three identical bills proposing to enact a Maternal and Child Welfare Act. These bills are companion measures to the legislation sponsored in the Senate by Senator Pepper as S. 1318.

Senator Pepper was the first witness and presented arguments similar to those he gave at the hearings on S. 1606 in support of amendments he offered, the effect of which would be essentially to add the provisions of his own bill, S. 1318, to the Wagner-Murray-Dingell bill.

Two representatives of the Children's Bureau testified in support of the legislation: Katharine F. Lenroot, chief of the bureau, and Martha M. Eliot, M.D., associate chief.

Miss Lenroot devoted most of her time to discussing the different phases of the problem presented by the delinquent child and the government's responsibility. Under the proposed legislation, she said, it would be possible for each state, with federal and state funds, and local funds in some instances, to provide services in the public welfare department that would be available whenever a child needed help. The needs of these "socially handicapped" children would be met through the services of well qualified child welfare workers who would bring to bear on their problem all the available resources of the community, both public and private. Besides providing for the services of those workers, federal funds would also be available for strengthening the resources of the community for the care of children in foster homes and for other specified types of care. The proposed legislation, she pointed out, would keep federal responsibility in the Children's Bureau, thus continuing to make possible general planning and adequate correlation of maternal and child health and child welfare services to the end that they may effectively meet the needs of children. "Their lives cannot be divided into separate water tight compartments labeled 'health' and 'welfare.' They must be viewed and served as living, growing human beings" she said.

Dr. Eliot pointed out that under the provisions of the legislation the state would have to meet certain requirements to be eligible for federal financial participation but expressed the opinion that the actual determination of how the program is to be undertaken and what is to be done at any particular time will be the responsibility of the state agency. She emphasized that in order that the best results should be achieved all health "services must be accessible to every individual with no economic barriers to their use or discrimination on account of race, color, creed, national origin or residence. There must be a sufficient number of trained professional people to make it possible for this kind of service to be made available."

Mrs. Agnes Meyer, wife of the publisher of the Washington *Post*, was another witness. She attacked the administration of the Children's Bureau, charging that "during the war the Children's Bureau neglected its own important and fundamental reason for existence since all of its spare energies went into the administration of emergency programs." She argued in favor of the President's plan of transferring the Children's Bureau to the Federal Security Agency, contending that leaving it where it is results in much duplication: duplicate state plans, duplicate reports, duplicate budgets and duplicate supervision and audits. She feared, she said, that if the legislation under consideration was enacted it "could potentially result in the creation in the Children's Bureau of a Health Division larger than the Public Health Service and a Welfare Division larger than that of the Social Security Board."

Dr. Joseph Wall of Washington, D. C., and Dr. Joseph Howard of Bridgeport, Conn., appeared for the American Medical Association. Dr. Wall presented a careful analysis of the provisions of the legislation, pointing out weaknesses. He enumerated the instances where the legislation would give specific authority to the Children's Bureau which would violate the autonomy of the individual state. He called attention to the fact that the bureau would have authority for developing an extensive code of regulations which would carry the authority of the law. He said "The state is commanded to construct 'standards for professional personnel rendering medical, dental, nursing and related types of care or services, such standards to be established by the state health agency. . . .' E. M. I. C. and other experiences prove beyond peradventure that the Children's Bureau and not the state agencies have heretofore established such standards for professional personnel and for hospitals." In speaking of remuneration he said "Who is to establish what is to be considered as 'adequate remuneration'? Past experiences with governmental experimental medical practice indicate that remuneration will be far from adequate and that the fee schedules will be established by bureaucratic edicts which will remain as immutable as the laws of the Medes and Persians and that they will be fixed by remote control almost as distant from some state localities as Iran itself."

Dr. Wall expressed the conviction that the legislation "merits the unanimous disapproval of the medical profession, the members of which, obviously, will be commandeered to become the purveyors of medical care to all who will 'embrace the benefits of the program.' Those physicians who do not 'choose' to participate will be left to their own resources to survive or perish in competition with government practice fortified with the bait of free service dangled before the consumer in the form of a federal dole."

Dr. Howard presented a statement drafted largely from his experiences under the E. M. I. C. program and studies he has made of conditions in other states and countries. He accompanied his statement with a graph showing that the maternal deaths in the present century reached their peak about 1918 and since then have been uniformly decreasing with the exception of a slight interruption in 1927. He said "The United States is a young country. Previous to 1930 the maternal mortality rate remained rather constant in most countries. In 1936 a sharp drop occurred, chiefly in the United States, Switzerland, South Africa, Mexico, Scotland, New Zealand, Eire, Australia, Canada, England and Wales. This may have been due to a wider use of transfusions and the introduction of the sulfonamide drugs, but strangely enough the reduction was evident not only in cases of infection and hemorrhage but also in toxemias. This reduction has continued at a more rapid rate in this country than in others." During the ten year period from 1933 to 1943, he continued, "maternal mortality in the United States declined 60 per cent, from 61.5 deaths per 10,000 live births directly due to pregnancy in 1933 to 24.5 in 1943. No other country has made such progress. These figures are more striking when we realize that in this same period there was an increase in births of 30 per cent. The rate for all obstetric deaths was reduced 60.4 per cent, from infection 62.6 per cent, from toxemia 57.8 per cent, from hemorrhage and other causes 59.9 per cent. In 1940 only two states in the United States had maternal mortality rates less than 2.5; in 1942 twenty-nine states had achieved this position. In 1933 Florida had the highest rate, 115 per 10,000 live births. Idaho had the lowest, 43 per 10,000 live births. In 1943 New Mexico was high with 47, which was only slightly higher than the low record of Idaho ten years before—Oregon and Minnesota shared the low record with rates below 15. During these ten years every state has shown a definite reduction, the smallest being 41 per cent in North Dakota and the largest being 76 per cent in Nevada."

In concluding, Dr. Howard stated, "The medical profession is vitally interested in good maternity care for all women. We are proud of the reduction in maternal mortality in our country, a record not exceeded by any other country. We believe that this reduction will continue under the present system of medical

care. We believe that aid should be extended to those states not financially able to carry on an efficient maternal and child health program.

"We do not believe that services and facilities should be available to all who elect to participate regardless of economic status. We do not believe that authority for such a vast program should be vested in the chief of the Children's Bureau, who would have power to (1) veto any state program and cut off federal aid, (2) force adoption of Children's Bureau standards of medical care and administration and (3) establish maximum remuneration for all professional participants."

Dr. V. A. Getting, testifying as secretary of the Association of State and Territorial Health Officers, expressed opposition to the legislation in its present form and submitted a number of amendments. "It is the opinion of the Association of State and Territorial Health Officers," he said "that state health departments are not prepared to undertake a medical care program for maternal and child health unless consideration is given to their ability to expand and participate. The association therefore recommends that the bill be modified to permit a gradual development of the program over a period of years, limiting it in the first year to children under 1 year of age and extending it by the tenth year of operation to include all children up to the age of 18 years. Preventive, diagnostic, school health and related facilities would necessarily be made available to all children." He emphasized the need for a coordinated federal health program. "Duplicate reports, audits and other inefficient operative procedures could be eliminated," he said, "by the unification of the Children's Bureau of the Department of Labor, the U. S. Public Health Service of the Federal Security Agency and other agencies of the federal government dealing with public health into a single department of public health or of public health and welfare under the direction of a cabinet secretary."

Dr. C. L. Palmer and Dr. James S. Taylor testified for the Medical Society of Pennsylvania in opposition to the legislation, but their testimony is not available for condensing.

FEDERAL MEDICAL SERVICES

President Truman, Dec. 12, 1945, appointed a Committee on Integration of the Medical Services of the Government to make a study of the medical care provided by various governmental services and to make recommendations for improvement and for changes in basic policy.[1] The report of the committee, released June 18, is divided into two broad divisions, part I relating to medical service in the Veterans Administration and part II dealing with the broader problem of the desirability of integrating all government medical services.

Concerning part I, the report, among other things, approved the principle of making use of community medical and hospital care for veterans with service connected disability, and it recommended that outpatient care be made available to veterans suffering from non-service disabilities. President Truman, however, in transmitting the report to the Bureau of the Budget, expressed opposition to this recommendation. In the main, the committee expressed the belief that the procedures authorized and being carried out under the law enacted in December of last year establishing a Department of Medicine and Surgery in the Veterans Administration will result in a better quality of medical care for veterans.

Under part II the committee pointed out that the present method of providing medical care by a system of parallel government agencies is considered by many informed persons to be inefficient, ineffective and extravagant. Each agency, the committee observed, for all practical purposes now acts as a separate unit, resulting in competition for and duplication of personnel and facilities and discouraging their economical and effective utilization. Before there can be an effective reorganization, the committee believes that a complete and exhaustive survey of current medical resources is necessary; then a plan can be formulated to provide an integrated and improved system of medical care for the armed forces, the veterans and other charges of the federal government. This conviction was reemphasized in the concluding paragraph of the report:

> In conclusion, the Committee wishes to repeat its firm conviction that the existing situation in respect to the medical services of the government calls for a thorough and bold restudy. It believes that a comprehensive report on the methods of gearing together the federal medical services is not possible until a detailed and painstaking examination of all the problems involved has been completed. It is recommended, therefore, that funds be provided to make possible an authoritative study by a selected committee with adequate staff, in order that a report setting forth specific recommendations based on a thorough survey of all factual data may be available as soon as feasible.

President Truman, in his letter to the director of the Bureau of the Budget, concurred in the foregoing committee recommendation and requested the director to suggest the names of outstanding medical men to serve on a committee to make the study. He felt, however, that the study should be delayed until after the Army-Navy merger issues are resolved.

An intelligent, impartial survey, as contemplated in the committee's recommendation, would seem to represent a scientific approach to the problem involved, an approach not infrequently lacking in suggested governmental programs in the field of medical care.

1. Membership of committee: Dr. Harold W. Dodds, president of Princeton University, chairman; Major Gen. Howard McC. Snyder, U. S. Army; Dr. Basil C. McLean, medical director, Strong Memorial Hospital, and consultant to the Secretary of the Navy; Rear Admiral Daniel Hunt, Medical Corps, U. S. N.; Dr. Charles W. Mayo, Rochester, Minn.; Dr. Howard A. Rusk, associate editor, New York Times; Mr. Chester I. Barnard, president, New Jersey Bell Telephone Company, and Surg. Gen. Thomas Parran of the United States Public Health Service.

STATE LEGISLATION

Louisiana

Bill Passed.—H. 257 passed the house June 7. It proposes that the director of experiment stations of Louisiana State University and Agricultural and Mechanical College be recognized as the state chemist, with all the rights conferred and all the duties and obligations imposed on that office.

Massachusetts

Bill Passed.—H. 1822 passed the house June 13. It proposes that any applicant for a license to practice a profession who has served in the armed forces of the United States during World War II shall be subject only to educational and experience qualifications required prior to Sept. 16, 1940.

Bills Enacted.—H. 2001 has become chapter 82 of the Resolves of 1946. It increases the scope of a special commission investigating certain matters relating to public education, relative to changing the name of the Massachusetts State College to the University of Massachusetts and to establishing a medical school at that institution. H. 2029 has become chapter 517 of the Laws of 1946. It provides that any container containing DDT be labeled in certain ways so as to protect the purchaser from being poisoned thereby. H. 2060 has become chapter 524 of the Laws of 1946. It prohibits the removal of nurse employees of the department of mental health, public health, public welfare or correction, who render professional service, except for just cause after such person has served satisfactorily for six months in his position. S. 44 has become chapter 93 of the Resolves of 1946. It authorizes the department of public health to investigate and study the causes of poliomyelitis, commonly called infantile paralysis, and the eradication of such disease. S. 426 has become chapter 511 of the Laws of 1946. It authorizes the construction of an 800 bed hospital for the care of persons suffering from chronic diseases. S. 533 has become chapter 71 of the Resolves of 1946. It provides for a departmental study relative to the regulation of certain hospitals, sanatoriums, convalescent homes and nursing homes by the department of public health.

Coming Medical Meetings

American Medical Association, San Francisco, July 1-5. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.

American Urological Association, Cincinnati, July 22-25. Dr. Thomas D. Moore, 899 Madison Ave., Memphis 3, Tenn., Secretary.

Montana, Medical Association of, Great Falls, July 18-20. Dr. Raymond F. Peterson, 9 W. Granite St., Butte, Secretary.

Washington Letter

(From a Special Correspondent)

June 24, 1946.

Atom Bomb Plant to Turn Out Materials for Medical Research

The War Department announced that atom bomb plants will soon be turning out radioactive isotopes for use in medical research in hospitals and universities. An isotope is a variation of the chemical atom which has atomic weight and physical proportions differing from the original element. It can be produced by bombarding the original atom with other atom particles. Scientists say there are more than 400 varieties. The radioactive isotope uranium 235 was used in making the atom bomb. Isotopes to be made for medical research include those of such elements as carbon, sulfur, phosphorus and iodine. The Army indicates that the isotopes can be used for medical research in two ways: (1) as tracers to follow bodily processes such as growth of tissue, either normal or malignant, and (2) "possibly, after considerable research," as direct therapeutic agents for treatment of specific diseases. The radioactive form of sulfur can be used to trace the reaction of the sulfonamides on the human system, and radioiodine can be used to study thyroid functions. To check for the presence of tumors or cancers the radioactive elements can be administered in minute amounts in a glass of water. As radioactive materials tend to congregate in affected areas, they can be readily seen through x-rays. The atomic material will undergo mass production at the Clinton Laboratories in Oak Ridge, Tenn., operated for the Army by the Monsanto Chemical Company. Some isotopes were available from cyclotrons before the war in limited quantities.

Work of Voluntary Agencies Criticized by Health Survey

The Metropolitan Health Council, a division of the Council of Social Agencies, charges in its eighteenth report that there is a serious gap in the work of Washington voluntary health agencies in control of cancer, heart disease and mental diseases. The report cited a lack of community programs in nutrition, dental health and year round public health education. On the brighter side the survey reports an increased public interest in health matters, good work by active medical and dental societies, and many well organized health agencies, including the Metropolitan Health Council, which made the survey.

Fifteen Seventh Day Adventist Sanatoriums Treat 60,000 Persons

Dr. H. M. Walton, secretary of the Seventh Day Adventist Church medical department, reported to the forty-fifth general session held in Washington that 60,000 persons had been treated in the fifteen Adventist sanatoriums in North America. Dr. E. L. Morel, who has served for twelve years in the South African colony for the leprous, reported that half of the patients admitted were disposed of as "arrested cases" after four years. He said "we don't say lepers are cured any more than we say tuberculous cases are cured, other than that no leprosy germs can be determined microscopically."

Prediction of Heavy Death Toll From Traffic

Franklin M. Kreml, director of the Northwestern University Traffic Institute, informed the International Association of Police Chiefs board meeting here that in the next ten years the United States will suffer half a million deaths, 15 million injuries and 1½ million crippling injuries through automobile accidents unless a determined program of traffic control is adopted and followed by the public.

Advocacy of Intensified Cancer Research in House

A House of Representatives committee has granted a request by the U. S. Public Health Service for $1,772,000 to finance cancer research. The disease kills more than 170,000 Americans annually. The committee endorsed an intensified attack on cancer, recommending a budget more than double current funds. This year's appropriation for the work is $548,700. Dr. Warren F. Draper, deputy surgeon general, told the committee that cancer ranks second as a cause of death in this country. Between Pearl Harbor and V-J day it killed 600,000 Americans, more than twice the number listed as dead or missing in action by the armed forces during the war. In the Federal Security Agency appropriation bill for 1947 the Public Health Service also asked for a fund to make larger grants to private research organizations, $500,000 for next year as compared with $75,000 this year. Meantime a Gallup poll reports that 87 per cent of persons interviewed approved having the Government spend 100 million dollars to find ways of preventing or curing cancer, and 72 per cent were willing to pay more taxes to provide the money. The committee on gastric cancer of the National Cancer Advisory Council, meeting at Bethesda, Md., discussed research projects to be instituted. A report by the Metropolitan Health Council, a division of the Council of Social Agencies, charges that the District of Columbia chapter of the American Cancer Society is "chiefly a paper organization."

Psychiatric Association Criticizes Changes at St. Elizabeths Hospital

Exclusion of military patients from St. Elizabeths Hospital in Washington, as proposed in President Truman's reorganization plan, was criticized by Dr. Ross Chapman, past president of the American Psychiatric Association. Testifying at a hearing before the House Committee on Expenditures of the Executive Departments, he said the association is "deeply disturbed" at the idea of discontinuance of the hospital at a teaching center. Dr. Chapman said that through its accomplishments in clinical medicine and research the hospital has become "an institution of national significance."

Research Being Resumed in Pacific Areas

Research, especially in biologic and medical fields, is being resumed throughout the Pacific islands, it was revealed at a conference of seventy-five scientific leaders and governmental representatives at the National Academy of Sciences. The war and the presence of Japs on many islands disrupted research programs to the extent that sixteen insects dangerous to plant and animal life have been introduced into Hawaii. Scientists are mapping extensive field work through a chain of field stations. Army installations will be used, with a start at New Caledonia, where the French government is cooperating to make facilities available to scientists of all nations.

Investigating Board Clears Medical Staff of Ship Zebulon B. Vance

An investigating board has reported to the War Department that "lax sanitary methods employed by mothers" may have contributed to deaths of 8 baby patients brought to this country from Europe on the "bride ship" *Zebulon B. Vance*. The report stated that "no misconduct or neglect on the part of the medical staff aboard the vessel contributed in any way to the cause or spread of the illness, nor were any members of the medical staff intoxicated at any time during the voyage, as alleged by several of the passengers."

New Mobile X-Ray Unit Used by Secretary of Agriculture

Secretary of Agriculture Clinton Anderson was the first person to undergo examination in the U. S. Public Health Service's new mobile x-ray unit, the test showing a healed tuberculous condition. The equipment is intended for mass tests of large groups of persons. Dr. C. L. Williams of the Public Health Service predicted disappearance of tuberculosis "within a generation" in accepting the unit from the General Electric X-Ray Company on behalf of Surg. Gen. Thomas Parran.

Senate Approves National Institute of Dental Research

The Senate has approved and sent to the House a bill to create a National Institute of Dental Research within the U. S. Public Health Service with a $2,000,000 building at Bethesda, and funds for research on dental decay and how to combat it. Reporting the bill, the Senate Education and Labor committee said that 75 per cent of the people neglect their teeth, and only 25 per cent get "anything like" adequate or regular dental care.

THE WAGNER-MURRAY-DINGELL BILL

Hearings on S. 1606—To Provide for a National Health Program

(NOTE.—*This is a condensation of the verbatim report of the hearings.*—ED.)

(Continued from page 692)

United States Senate, Committee on Education and Labor.

MAY 6, 1946

HONORABLE JAMES E. MURRAY Presiding

PRESENT: Senators Murray and Donnell.

Statement of Rev. R. A. McGowan, Director, Department of Social Action, National Catholic Welfare Conference

REV. FATHER MCGOWAN: The Bishops' Program of Social Reconstruction, issued twenty-seven years ago, just after World War I, urged social security not only against unemployment and old age but against sickness and disability.

In order that any national health program can become effective the following requirements are essential:

(*a*) There must be an extension of hospital facilities by means of government support or subsidy for hospital construction, particularly in the areas sparsely settled and in the areas of low per capita income. There can be no extension of services without facilities to implement the program. This proposal is now under consideration by Congress.

(*b*) There must be a notable extension of public health centers for the prevention of illness. This phase of the program requires federal appropriation and administration and is included in title I of this bill.

(*c*) There must be provision for adequate medical and nursing services in areas where such services are now insufficient. Private or voluntary effort will not place doctors or nurses where most needed. Some form of government aid will be required for this purpose. We suggest consideration of this: That in such areas a policy of granting government commissions to selected physicians for civilian service on at least a part time basis be carefully explored and also the idea of using the services of physicians attached to the military services.

(*d*) There should be federal support or subsidy to the states on a matching basis to provide care for the medically dependent who are entitled to "public assistance." This too is in title I.

(*e*) There should be subsidies granted by the federal government to qualified colleges and universities for medical research.

We favor the establishment of a national health program which will provide both hospital and medical care for the citizens of our country. We recognize that the voluntary systems of health insurance which have rendered excellent service to our people would require some form of government aid to achieve universal health security.

We favor in consequence a national system of insurance supplemented by government tax revenues by means of which all citizens can be protected in matters of health; but we consider that this bill as presently drafted is unsatisfactory because of the complicated methods of administration which it creates and because of the excessive governmental control over the health services which are to be provided.

Rights of patients, doctors, nurses, hospitals and private health insurance organizations must be protected for the success of the program. We do not doubt the intention of the writers of this bill to protect these rights. We think that they have gone far in stating these rights. But we are still dubious. We are dubious about the method of administration.

(*Rev. Father McGowan suggested many modifications of the proposed legislation.*)

SENATOR MURRAY: Father, am I correct in my understanding of Catholic social thinking in saying that the key thought is the importance and dignity ascribed to the human personality? REV. FATHER MCGOWAN: Yes, Senator.

SENATOR MURRAY: Do you believe that a means test, making people dependent on public charity, would detract in any manner from that dignity of the human personality? REV. FATHER MCGOWAN: Yes, I think it would. Under this bill, which is quite extensive, that is not provided.

SENATOR MURRAY: You think that any system which would provide for any section of our population to take a pauper's oath would not be in accordance with good, sound Catholic thinking? REV. FATHER MCGOWAN: Not for health purposes at all, no.

SENATOR MURRAY: Has the church taken any stand during the past century, when these problems were being agitated in other parts of the country, with reference to systems of insurance, health insurance? REV. FATHER MCGOWAN: I do not think there has been any formal statement, but there certainly has been great encouragement of the private health insurance systems. I made the statement in here, however, on the matter of advocacy of public health insurance by the Bishops' Program years back.

SENATOR MURRAY: Pope Pius XI, in his Encyclical on Atheistic Communism, dated March 19, 1937, gave his approval and encouragement to a system of insurance against illness, did he not, Father? REV. FATHER MCGOWAN: Yes. In paragraph 52 of that encyclical he has something on it. I will read the whole sentence: "But social justice cannot be said to have been satisfied as long as working men are denied a salary that will enable them to secure proper sustenance for themselves and for their families; as long as they are denied the opportunity of acquiring a modest fortune and forestalling the plague of universal pauperism; as long as they cannot make suitable provision through public or private insurance for old age, for periods of illness and unemployment."

SENATOR DONNELL: I had not seen the Bishops' Program of Social Reconstruction until this morning, and I have hastily sketched portions of it while you were testifying, although, of course, I could not assimilate it all in the few moments I have had. I observe at page 8 this language: "The social insurance provided in the Social Security Act is by no means perfect. To say nothing of other defects, it fails to provide for workers' insurance against sickness." Do you understand, Father, that that language necessarily means an advocacy of compulsory health insurance of the type under which services, medical and surgical services, are provided as distinguished from insurance benefits in cash? REV. FATHER MCGOWAN: No. I do not believe that a person could get from that advocacy of either method.

(*There was extended discussion of monopolies and minimum wage laws.*)

SENATOR DONNELL: Mr. Chairman, I was not in this questioning primarily addressing myself to the probabilities of economic development in the country but rather to undertake to determine what is exactly the theory of the Bishops' Program, and, as I understand it, to quote again this sentence: "Hence all forms of state insurance should be regarded as merely a lesser evil and should be so organized and administered as to hasten the coming of the normal condition." I think that indicates the thought of the writer or writers not that state insurance is itself a positive good but that as it is stated here it should be regarded as merely a lesser evil. REV. FATHER MCGOWAN: Yes.

SENATOR DONNELL: Now, Father McGowan, you are not as pessimistic as the chairman as to the arrival at an improved condition which would obviate the necessity of this type of insurance? I am correct in that, am I not, Father? REV. FATHER MCGOWAN: Yes.

SENATOR MURRAY: I understood you were. REV. FATHER MCGOWAN: Not so pessimistic.

SENATOR MURRAY: You think it may come within the next century? REV. FATHER MCGOWAN: Well, I hope so.

Statement of John H. Hayes, President-Elect of the American Hospital Association, Accompanied by Mr. George Bugbee, Executive Director of the American Hospital Association

MR. HAYES: The American Hospital Association represents approximately 3,500 hospitals comprising about 85 per cent of the civilian general hospital bed capacity of the nation. We also have as members a substantial number of city, county, state and federal hospitals. We do not appear before you as a commercial group with a vested interest in any present organization for distribution of hospital care. We are not under this bill threatened with taxes, increased costs or great financial losses. Hospitals occupy a unique position in the social structure of America. Nearly every hospital performs a substantial amount of charity work, and by far the majority of hospitals

are operated by organizations who do so for the sake of rendering service and not for making a profit.

We appear rather as a group having the greatest fund of experience in the administrative aspects of making hospital care and thus medical care available to the sick. Hospitals are organized as representatives of the public to provide the skilled personnel and technical facilities needed by physicians and surgeons in rendering care to their patients. We who administer hospitals for the benefit of society do so with a strong sense of our responsibility as public servants.

We do not claim to have solved all the problems incident to the proper distribution of hospital and medical service. But hospitals have carried a large part of the development of the present high quality of such care in America, and it is therefore our duty to be in the forefront in supporting any program which might bring progress in our field and to lend our voice in opposition to any program which might imperil such progress or impede its further development.

As a group we endorse the aims of a program of federal grants in aid to the states to make hospital and health care available to those who cannot pay for it. In previous appearances before your committee the American Hospital Association has advocated such measures for indigent care, and to this extent we endorse in general the aims of that part of title I which would make such provision. However, were any portion of such legislation to be recommended for passage, it should be carefully studied, bearing in mind the need for state participation and responsibility, decentralization of authority and proper limitation of federal authority. But we vigorously oppose the provisions of title II of this legislation, which would place the federal government in such a dominant position in the health field as to lead inevitably to federal control and operation of the entire health system of the nation. This bill would give a federal agency complete control of practically all the funds needed to pay physicians, hospitals, nurses, dentists and others who render care to the sick. Control of the purse-strings means control of the program, and we think this is highly dangerous.

The development of health care in this country has not followed any fixed pattern. Yet nowhere in the world has it made greater progress. Literally billions of dollars have been donated by churches, philanthropic organizations, public spirited citizens and various community groups to build hospitals to provide care for the people of this nation. Benjamin Franklin was one of the trustees of the first voluntary, nonprofit hospital in the United States, and the hospital he helped to found is still in operation as a monument to the civic interest of this great American genius. Since that time outstanding citizens in every section of the country have been members of boards of trustees of hospitals in their local communities in recognition of the importance of the hospital to the people of the area. These tens of thousands of trustees are the representatives of the general public, organized to supervise the policies of the hospital with respect to the needs of the individual community and to see that the institution renders its fullest measure of service to its citizens. Representatives of our various church groups have fulfilled a similar purpose in operating hospitals in areas where they were needed.

Within the walls of hospitals in every part of the nation, thousands of physicians, nurses, hospital administrators and other personnel have individually and collectively contributed to the development of a system of hospital and medical care which draws very little criticism except that there is not enough of it. The strength of this system is that it has grown and is continuing to grow according to the needs of the people it has served. It is rooted in many soils and has developed along various lines. Today's health care system is a living, growing organism which is instantly adaptable to the latest scientific discoveries, to the needs of the community or to the individual patient.

We are keenly aware of the fact that the amazing development of hospital services over the past two generations has been the result of those incentives which are found only in a free and independent professional group devoting their whole attention and interest to their efforts to be of service to society.

If control of the funds of a compulsory health insurance system is placed in the hands of the federal government, the continuing growth of our present system, which has brought such progress, will be seriously affected, because, administratively, the federal government will have to adhere to a single pattern of providing care. If our present system had been developed in a single pattern, this might be less difficult. But it has not; and we have no reason to believe that the federal government will be able to determine such a pattern. Nevertheless, if this legislation be enacted, those who administer the law will be obliged to establish some pattern at once. And they will be in position to enforce that pattern—right or wrong—through complete control of funds. The terrible inertia of government regulation could easily retard further development of health care in America.

Therefore, as a group, on the basis of our experience, we are opposed to the legislation which you are considering, because it would put the federal government into the position of controlling the whole health field. We regard this legislation as a dangerous violation of all that has been learned in the administration of hospitals. In a nutshell, hospital and medical care is a personal service, and the more remote the control, the worse the service. Please understand that we do not condemn all government activity in the hospital field, for government has had an important part both on federal and on local levels. But we cannot believe that the answer to the health problem of our country is to place the federal government in the position of collecting and dispensing practically all the funds needed to pay physicians, hospitals, dentists, nurses and others who supply care to the sick.

We are further opposed to this legislation because it has been our experience that government in the health field is seldom able to control its cost of service and, on the other hand, is likely to promise greater benefits than funds will permit. Between a steadily rising cost of benefits and an increasing demand for more of such benefits the government would soon begin to operate under tremendous financial pressure. We do not believe that the potential demand of this program on the taxing power of the federal government has been fully evaluated. Certainly this may become one of the most expensive programs the federal government has ever undertaken, and the responsibility to be imposed on the federal government for meeting such broad promises to the American people is not easily comprehended.

The whole problem of purchasing hospital and health service is still developing. Under S. 1606 the federal government would be almost the sole purchaser of such service. We do not believe it is realistic to assume that the system proposed by this legislation would long continue. Steadily increasing costs, arguments as to various methods of rendering such care in different hospitals, would lead to such criticism of the program that the federal government would be constantly taking steps to meet such criticism. However, these pressures would be such that before very long the government would be controlling the whole system by regulation, and government operation would be inevitable.

State and local governments in their operation of hospital facilities have found no easy answer to these financial pressures. In most cases such government institutions offer only minimal and impersonal service. The federal government itself has been subjected to much criticism for faulty operation of its own hospitals. Its experience in hospital operation is not such as to encourage us to believe that government operation of hospitals will improve the quality of hospital service or reduce its cost.

The sponsors of this legislation do not believe that its compulsory health features will lead to government operation, and they have repeatedly so stated. Nevertheless, we firmly believe that the pressure for increasing benefits, coupled with rising costs of such benefits, will not only lead to government operation but will further result in serious deterioration of the quality of service, because of the inadequacy of funds. Government control of funds will greatly change present incentives for quality of medical and hospital service. Quality, under such conditions, will be sacrificed for quantity. This financial pressure will require detailed control of those to whom funds are paid. There is grave danger that imposed standards and sweeping regulations may supersede the present cardinal rule which places the welfare and comfort of the individual patient above all other considerations. This control by regulation will have to be established within the range of the average hospital. The process of averaging may result very logically in improving the services of substandard hospitals, but it will also almost certainly result in the elimination of our present higher cost hospitals. This will strike directly at our teaching hospitals and those which now render distinctive service. Will this not mean the elimination of leadership in the hospital field? The sponsors of this measure completely overlook the sources of hospital progress.

We are fearful of this legislation too because it makes promises which are impossible of fulfilment. For example, there are now in this country approximately 130,000 active physicans. These men, as you know, seldom work regular hours. However, it is reasonable to assume that under a federally controlled administration these physicians, like other government employees, would fall back into a five day, forty hour week. Allowing for the usual two weeks' vacation, we find that fifty weeks of such service would make two thousand

hours of medical service available from each physician in a year, and a total of 260 million hours a year from the whole profession. Since we have a population of over 140 million people this is less than two hours of medical service a year for each individual. In other words, there are not enough physicians in the country right now to provide even two complete physical examinations a year for each citizen. The normal output of our medical schools is approximately 5,000 physicians annually, which is barely enough for replacement needs. If the output was increased to 10,000 a year it would require twenty-six years to double our physician census. In the meantime, should this bill suddenly become a law, the overwhelming load thrown on our medical profession would result in the lowest standards of medical care this country has ever known. It is our feeling that the proponents of this legislation have not taken these facts into consideration in their discussion of the vast benefits to be afforded the nation immediately on passage of this bill.

As a matter of fact, in all the years during which we have had a social security system in operation in this country a large portion of the employed population is still not covered by present benefits. Yet here is proposed a much more complex program which is being promised to the entire population. In view of the still partial acceptance of social security provisions, we are unable to envision the establishment of a universal compulsory health program which would even in the distant future accomplish all of the things which are promised.

We are fully sympathetic with the aims of those who would like to have more medical and hospital service available to more people. That is also one of our aims. However, we do not believe it can be widely and effectively accomplished in one bold stroke. Rather, we believe it requires an orderly, intelligent program which will be more closely integrated to the needs of our people. It takes eight years to train a physician. Hospitals can be built more rapidly, but it also takes time to develop the highly trained personnel necessary to provide our citizens with the high quality of hospital service they have come to expect and desire when they are sick. Enactment of S. 1606 as it is at present drawn would not correct our basic shortages in facilities and personnel. Rather it would intensify the existing shortages in facilities and personnel and create confusion by its unrealistic approach to the whole health problem. Indeed, we believe that the assignment of ultimate authority in the health field to the federal government might well retard its further development because of the stultifying effects of remote control and administration by regulation.

The American Hospital Association takes great pride in the progress that has been accomplished by the Blue Cross Hospital Prepayment Plans in protecting more than 21 million people in forty-five states against the unexpected costs of hospital care. The expansion of this prepayment system, which has been sponsored by the association, has been one of the greatest examples of voluntary public cooperation in the world. We believe that our government should be actively supporting this program instead of criticizing it because it has not yet covered the entire population. Blue Cross has been a dramatic development and much of its success has been dependent on payroll deduction. The federal government, the largest employer in the country, has not taken the simple step necessary to offer this protection to its employees through such payroll deduction. Instead high officials criticize Blue Cross because no greater a proportion of the population is covered. Cooperation from the federal government would be an easy step and most helpful in this voluntary movement to offer hospital benefits to the employed population and their dependents. Blue Cross has merited such government cooperation—certainly not its criticism.

Blue Cross is low in cost, and its costs of operation are low. Only those who are now employed would contribute to the program under S. 1606, and these are all eligible to enroll with Blue Cross. In our opinion it would be far better that these voluntary plans with their broad coverage for the employed and their dependents be further extended before we consider compulsory insurance as the easy answer to the whole problem of distributing hospital and medical care. The "magic of averages" is not the complete answer to all our problems.

Incidentally, I wonder if you have considered the probable attitude of the veteran to this program of health insurance on a compulsory basis? Under present circumstances, you know, the veteran is already receiving extensive health services without cost to himself. Yet, if you enact this bill you are going to have to tax these veterans, along with the rest of us, to pay for benefits they are already receiving for nothing. The veterans are a substantial group who have little to gain and a great deal to lose by the passage of this compulsory health bill.

As I have said, the American Hospital Association has as one of its primary aims the better distribution of hospital services to our people and the continuing development of better standards of quality and service. With this in mind we have actively supported the Hospital Survey and Construction Act, which was studied by your committee last year and passed by the Senate last December. That bill is now being studied by a committee of the House of Representatives, and if it is enacted we believe it will go far toward relieving the present shortage of hospital facilities in this nation. We wish to compliment your committee for the fine work that was accomplished in the development and passage of S. 191.

However, the construction of additional hospitals and the extension of Blue Cross will still leave one area which requires the attention of the federal government. We believe that all citizens, irrespective of their ability to pay, should obtain medical and hospital care according to their needs. Such a program requires acceptance by the federal government of the responsibility of helping to meet the basic costs of care to the needy. We believe this is a primary responsibility of state governments to be administered on a local basis, but with federal aid to equalize this assistance among the various states.

With Blue Cross plans for those who can pay, federal aid to the needy and a program for construction of additional hospitals in areas where they are most needed, we believe adequate and excellent health service can be made available to the whole nation without seriously disrupting the American system of voluntary health care, which is, admittedly, one of the finest in the world. This broad distribution of care could be achieved without the vast drain on federal resources and without taking the grave risks that are inherent in the program you are now considering. Such a program permits orderly development of demand for more hospital and medical service, and these steps will in themselves stimulate an increased supply of the competent professional workers required to staff expanded facilities. Hospital progress in this country has not been surpassed elsewhere. It has come about by voluntary action of the American people and without government control or interference. It is continuing to grow and will improve at an ever increasing rate if it is not so controlled. Humane care of the sick has been based on local effort and has been developed on an individualistic basis. It could not be standardized or regulated by government without losing much, if not all, of its value.

SENATOR MURRAY: Mr. Hayes, do you recognize the fact that in this country there are a large number of people who, for financial reasons, are unable to pay for modern medical care and hospitalization? MR. HAYES: Certainly, every one in hospitals realizes that and we take care of them for nothing in practically all our hospitals.

(*Senator Murray asked many questions about Blue Cross plans and services rendered free.*)

SENATOR MURRAY: You have read the circulars of the National Physicians Committee in which they say this is socialized medicine and regimentation, and so forth? MR. HAYES: All medicine is socialized as far as that goes. I would say it is federalized medicine.

SENATOR MURRAY: Is it federalized medicine or socialized medicine? It is nothing more than undertaking to give to the people of this country an opportunity to prepare for the medical care that they may need in emergencies. MR. HAYES: They have an opportunity now, Senator, in commercial plans, and otherwise, that I would believe to be much less than the 3 per cent of $3,600 or whatever the percentage might be. There are opportunities for every one to enter into these medical plans on an indemnity basis.

SENATOR MURRAY: I would like to have you furnish for the record any indemnity plan that would furnish the extent of care, medical care and hospitalization that is proposed under this bill.

. . . . . .

SENATOR MURRAY: Would you prefer to see a system where people would come in and have their care paid for by the government in preference to a system whereby they could be enabled, under the national insurance plan, to pay for it themselves? MR. HAYES: Not if the federal government controlled that system, no, sir.

SENATOR MURRAY: What is the federal control in this system that you are so opposed to? MR. HAYES: It is written throughout the bill. The Surgeon General would determine which hospitals could serve the public. We would be obliged to take a maximum rate of $7.

SENATOR MURRAY: I wish you would point that out in the bill for me. I know of no such provision. It provides that

the patient should have the choice of the doctor and of the hospital in which he wishes to be cared for. MR. HAYES: We are not approved by the Surgeon General. It mentions "hospitals approved." He determined the standard to be applied to the hospital and to the establishment and maintenance of the list of participating hospitals. That is included in page 44.

SENATOR MURRAY: Do you not think it would be advisable, as a provision, to have the government investigate these hospitals and determine the character of their personnel and the ability to give the kind of service that would be needed in our modern conditions? MR. HAYES: On a local or state basis, I believe that is all right.

SENATOR PEPPER: When I conferred with the Veterans Administration about a week ago, General Hawley definitely informed the delegation and myself that it is only service connected disability that they are trying to take care of. MR. HAYES: They are taking care of them in our hospitals to some extent.

SENATOR PEPPER: If a veteran received care for nonservice connected disabilities in this system contemplated by this bill and if his family received coverage and care, it would be appropriate for him to pay some kind of a compensation, would it not? MR. HAYES: Yes, if his family derived benefit from it.

SENATOR MURRAY: Is there any reason why similar arrangements under an insurance plan could not be entered into with hospitals? MR. HAYES: Well, Senator, if you did it on the basis that the Veterans Administration is doing it, paying for the cost, that is considerably more than $7 a day in the average voluntary hospital. My hospital is rather economically conducted and our costs in ward patients went up over $10 per patient last year for the first time.

SENATOR MURRAY: I notice you have discussed the effect of this bill on the medical profession. Did you prepare this entirely by yourself? MR. HAYES: I prepared the statement and sent it out to members of my council and asked for their suggestions, and they scarcely changed a word.

SENATOR MURRAY: They scarcely changed a word, but you had their advice and suggestions in the matter? MR. HAYES: I merely followed the policy of an officer of the association of letting the officers and trustees know what I was going to say.

SENATOR MURRAY: You did not let the Medical Association know what you were preparing this statement for? MR. HAYES: No, we are not permitted to speak for the medical profession. We speak of the effect on medical care.

SENATOR MURRAY: Did you talk it over with the staff in your hospital? MR. HAYES: No, sir.

. . . . . .

MR. HAYES: Under the Blue Cross Plan, we are paid the identical amount for each patient and they all get the ultimate in medical care.

SENATOR MURRAY: They get the highest character of medical care? MR. HAYES: That is right, but the Blue Cross starts off by paying $15 in New York City, $10 for the second and $9 for the third.

SENATOR MURRAY: So you would get much more under the voluntary system than the federal system? MR. HAYES: The hospitals get more than is proposed in this law.

SENATOR MURRAY: That is a very important item, of course, that you would make more profit under the voluntary system than you would under the federal system? MR. HAYES: Senator, we never make a profit. We always suffer losses.

SENATOR PEPPER: Mr. Hayes, I notice from your statement that there are some 3,500 hospitals that are members of the American Hospital Association. MR. HAYES: Yes, sir, that is right.

SENATOR PEPPER: These comprise about 85 per cent of the civilian general hospital bed capacity of the nation? MR. HAYES: That is right.

SENATOR PEPPER: Generally speaking, who owns those hospitals? MR. HAYES: They are owned by church organizations.

SENATOR PEPPER: What percentage is that? MR. HAYES: That is about a third.

SENATOR PEPPER: Who else owns them? MR. HAYES: The remainder are community enterprises.

SENATOR PEPPER: They are owned by communities? MR. HAYES: We have in our membership municipal and state hospitals. I am talking about the average voluntary hospital. It is difficult to say who owns an organization of that sort. It definitely has no ownership. It has a control in the board of trustees. It is built with philanthropy.

SENATOR PEPPER: You said about a third of the hospitals composing your organization are owned by church organizations. Can you give me a general idea as to what percentage of the whole number is owned by public bodies; that is, municipalities, counties, states or public bodies of any sort, and what percentage are owned by private bodies where public funds do not enter into them

MR. BUGBEE: I can give you an exact breakdown, Senator Pepper. I think the third is high. There are about 1,000 church hospitals in the country. Of our membership, I think it is 700 church hospitals and 500 of municipal, county and of that type. Then there are several hundred proprietary, which are, by and large, a small percentage of the bed capacity of the country as a whole, and the rest of this nonprofit type of corporation.

SENATOR PEPPER: What do you mean by "proprietary"? MR. BUGBEE: They are owned by physicians.

SENATOR MURRAY: Or are they owned by a group of physicians? MR. BUGBEE: Yes, they are.

SENATOR PEPPER: You say about 500 are publicly owned by counties and that sort of thing? MR. BUGBEE: That is right.

SENATOR PEPPER: And the others are owned by nonprofit organizations the funds for which are derived by private contributions? MR. BUGBEE: They are at least nonprofit as to any payment of dividends. The building may have been built by philanthropic gift or some of their funds for support of free care may be currently given each year, or the majority of the patients may, in certain instances, pay the costs themselves, or indigent patients may be paid by the local community out of tax funds. They are nonprofit.

SENATOR PEPPER: Already a considerable portion of the hospitals of the country serving civilian needs are supported by public bodies and by public funds? MR. BUGBEE: If you take all beds, mental, tuberculosis and others, that is certainly true by a great majority. We are referring to general hospital beds.

SENATOR PEPPER: Mr. Hayes, could you give me some idea as to how much charity the hospitals of your association give every year to the patient? MR. HAYES: Well, I have not the percentage. Of course, a good many of the hospitals are city or county institutions that are all charity. Every voluntary hospital does a certain percentage of charitable work, a little bit less in recent years. If people had a little more money, it would be different. My own hospital averages over the year about 60 per cent of the patients as charity patients.

SENATOR PEPPER: Taking the needs of the United States, what is the deficiency at the present time in the number of hospital beds required? MR. BUGBEE: There is variation as to the standards required. The Hospital Survey and Construction Act suggested a maximum 4½ beds per thousand for general hospitals. I believe the census of hospitals in the country is something over 3, with wide variation by areas on some above and some below.

SENATOR PEPPER: Can you say that all the people of New York City get all the hospital and medical care that they deserve and should have for their health? MR. HAYES: If they come for it, we have certainly more than sufficient beds to take care of them in the city.

SENATOR PEPPER: You reported that part of your patients paid and 60 per cent get charity? MR. HAYES: That is right.

SENATOR PEPPER: What do they have to show to be classified as a charity patient? MR. HAYES: The admitting clerk asks them where they live, their earning capacity and the rate might be determined as nothing, a dollar or $1.50 a day. We are required to have experienced and diplomatic people to ask those questions, but no one ever signs any oath that he is entitled to it.

SENATOR PEPPER: Every man's word does not have to be buttressed by an oath. They have to meet a means test in order to be classified as a charity patient. That is what they are. MR. HAYES: That is right.

SENATOR MURRAY: The reason you can give that service there in New York is because already the hospitals there are on a public basis. MR. HAYES: No, sir, New York has about the poorest record of any large city in the country as to what it pays the voluntary hospitals for care. For instance, in the hospitals in New York City, New York City pays a maximum of $3.25 per day for a case in the voluntary hospital, and that has to be strictly an emergency case, unable to go to a city hospital before they accept that. If a man comes in with pneumonia, if it is not very acute, they would not even pay for that. New York has a very bad record in that respect, and we have made several pleas. We are still hopeful that beginning with the first of July we will get a little more assistance.

(*Senator Pepper argued with Mr. Hayes at length over the Federal control of hospitals.*)

SENATOR PEPPER: Are you not thinking more of how it will affect you and your pleasure and your interests in the matter

than you are of those people out there in this country to whom this offers the only hope of getting the kind of medical and hospital care that they should? MR. HAYES: I think that is an unfair statement. I have been twenty years in the hospital business and I could have earned an easier living elsewhere.

SENATOR PEPPER: I do not say that you have no right to think of it from your point of view, but every time we think of the balance of good it will do to the one group as to the detriment of another, we have to consider those things. When we ask for taxes for a public purpose, we are balancing interests against one another. Now, that is what we have concluded, some of us, in respect to this legislation. There may be a certain amount of inconvenience until we can learn by experience a better method. It may have faults in it, and I am sure it will. We are saying that when you balance up the inconvenience it may cause somebody in the hospital, or maybe even the bad effects it may have with the fact that it will give life and health to millions of men, women and children in this country who cannot otherwise get it, then we feel that we are entitled in that balance of interest to side with the needy rather than with somebody who, from his particular experience, may not think it is a good thing. Do you see our point of view? MR. HAYES: Yes, I see it very clearly, except that we believe in evolution. This bill is entirely too much in the nature of being revolutionary, without sufficient people to carry out its purposes.

SENATOR MURRAY: Do you mean to say there are better opportunities today for people to get the best modern medical care, the fullest and most complete modern medical care than there were twenty-five years ago? MR. HAYES: There is a tremendous improvement. You can take, for instance, the lengthening of the span of life and everything else.

SENATOR MURRAY: The hospitals do not have anything to do with that. Hasn't that gone through Social Security to a very large degree? MR. HAYES: That was here before Social Security was ever enacted. The lengthening of the span of life and certain hospitals have had a great deal to do with that and the research in hospitals has had a great deal to do with it.

SENATOR MURRAY: Hasn't that research taken place in laboratories, and haven't the greatest advances taken place as a result of experts and scientists working apart from the medical profession and apart from the hospitals in developing these modern scientific ideas? MR. HAYES: No, that always is with hospitals and sick patients.

(Senator Murray, Senator Pepper and Mr. Hayes discussed at length the comparative costs of government and voluntary plans.)

(Senator Pepper and Mr. Hayes discussed the control over hospitals under the Wagner-Murray-Dingell bill.)

(Senator Donnell questioned Mr. Hayes as to his education and career.)

SENATOR DONNELL: Was Senator Wagner, one of the authors of this bill, recently a patient at your hospital? MR. HAYES: Yes, sir.

SENATOR DONNELL: Has it [the house of delegates of the American Hospital Association] expressed itself as being in favor of compulsory health insurance administered by the federal or any state government? MR. HAYES: Never.

SENATOR DONNELL: Now, Mr. Hayes, this morning Senator Murray, our chairman, who has devoted a tremendous amount of time to this subject, referred many times to what he considered to be the effort of this bill, S. 1606, to guarantee the best quality of modern medical care. I ask you if you have found anywhere in this bill, in the first place, any such language as that "best quality of modern medical care"? MR. HAYES: I do not recall it. I have read it about three times, and I do not recall it.

SENATOR DONNELL: And may I call your attention, Mr. Hayes, to page 68, to the fact that there is a limitation there to which reference was made this morning of the amount of the expense which hospitalization benefits may include under the bill? I read "Not less than $3 and not more than $7 for each day of hospitalization, not in excess of thirty days, which an individual has had in a period of hospitalization; and not less than $1.50 and not more than $4.50 for each day of hospitalization in excess of thirty in a period of hospitalization; and not less than $1.50 and not more than $3.50 for each day of care in an institution for the care of the chronic sick." Would you tell us, please, Mr. Hayes, whether or not hospitalization frequently, in order to have the highest quality, the best quality, for I will quote the Senator again, "the best quality modern medical care administered," whether hospitalization would require a greater expense per day than any of these limits specified in this bill. MR. HAYES: Definitely a greater expense.

SENATOR DONNELL: Considerable emphasis this morning was made on the subject of whether or not this was federalized medicine. Also Senator Murray called your attention to the fact that some literature has gone out calling it socialized medicine, and you would call it federalization. . . . I take it I am correct in this, Mr. Hayes: According to your analysis of this bill, the provisions of title II, namely that portion of it which relates, as it is entitled, to prepaid personal health insurance benefits, or what you and I may term compulsory health insurance, that is to be administered not by the states but by the federal government; that is correct, is it not? MR. HAYES: That is my understanding.

SENATOR DONNELL: It is true there is a provision in here to the effect that, and I call your attention to page 37 and following, "in the administration of this title the Surgeon General shall, in so far as practicable, give priority and preference to utilizing the facilities and services of state and local departments or agencies on the basis of mutual agreements with such departments or agencies," et cetera. That is in there, all right? MR. HAYES: Yes, sir.

SENATOR DONNELL: But the fact is that the Surgeon General is the man who gives the priority and the preference and makes the decision. MR. HAYES: That is right.

SENATOR DONNELL: And the Surgeon General, as I understand it, and as we all understand it, is exclusively a federal officer; that is true, is it not? MR. HAYES: That is correct.

(Through his questions Senator Donnell emphasized the nature of federal control under the Wagner-Murray-Dingell bill.)

(Senator Donnell brought out that the Surgeon General would make the contracts, pay the bills and determine the pattern of hospital services under the Wagner-Murray-Dingell bill.)

SENATOR DONNELL: So it would appear, would it not, Mr. Hayes, that in the first place the contracts are made by the Surgeon General with the hospital; second, he directs payments of moneys over to the hospital; in the third place, he selects what hospitals meet his approval under the bill. MR. HAYES: And writes the rules and regulations.

(Senator Donnell brought out that there is really no free choice of hospital under the Wagner-Murray-Dingell bill.)

Statement of Rev. John G. Martin, Past President of the American Protestant Hospital Association

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REV. MR. MARTIN: From very early history, treatment of those suffering from illness has been a traditional function of the Christian Church. Church hospitals today are an important segment of the hospital field. I do not believe it is the purpose of the sponsors of this legislation to find fault with the quality of service that has been rendered in any of these church hospitals.

However it now appears that, in spite of the admittedly excellent service that is now being rendered, this legislation would interject the federal government into a position between the hospital and the patient. There would be a strong tendency to substitute adherence to the standards fixed by the governmental agency in place of concern for the patient's welfare. If this happens, the federal government then becomes the dominant force in the whole health field and will tend to squeeze out the religious influences which have contributed so much to present day developments.

We, are concerned about the entry of the federal government into this picture in place of private philanthropy and human service, which has done so much for the health of our nation.

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In this discussion I would not want to make the impression on you that we do not favor government interest in the health field. Government has had and still has a very important function to perform in safeguarding and improving the general health of its citizens. It is our point that government should do this not by destroying a soundly developing system and substituting one of its own. Instead, the government would be wiser to take advantage of the program that has so far been so successful and improve on it by supporting and developing further the best features of the present system. I am sure you are aware of the great strides that have been made in recent years and are still being made today in the health field.

The system we have in America today has served us well and has made notable progress. It is strong and healthy and continues to grow. We believe that the answer to the health problem of our country is the further development of what we have. We greatly fear that, if attempt is made to spread this present system of hospital and health care too thinly and too suddenly, great loss of essential values will inevitably result. For that reason we believe the legislation before you should

have the most careful and thoughtful study before any action is taken on it.

(Senator Pepper questioned Rev. Mr. Martin on statistics of health and hospitalization.)

SENATOR PEPPER: Are you aware of the fact that 40 per cent of our counties do not have a full time public health officer? REV. MR. MARTIN: Those figures should be open to interpretation. There are a great many counties that do not even rate a hospital, but because of the great ease in transportation the patients in those counties could easily have access to the exisiting hospitals and the hospitals created by S. 191.

SENATOR PEPPER: If you could save the lives of men and women and children in this country, aren't you willing to make a few concessions and a few legalistic compromises and help the people of the United States get a national insurance system if that will save human life? REV. MR. MARTIN: My belief is that real development of our present system would accomplish that better than a compulsory system.

Statement of Alphonse H. Schwitalla, S. J., President of Catholic Hospital Association, Accompanied by M. R. Kneifl, Executive Secretary, Catholic Hospital Association

REV. DR. SCHWITALLA: These institutions are the most compactly organized group within the voluntary hospital field, being bound together, as they are, by a common purpose, a common outlook on life, a common attitude toward the patient, a common motivation that is spiritual and religious and a common desire to retain in and, if it should not be there, to introduce into the care of the sick not only the highest scientific and professional but also the very highest spiritual and religious influences.

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SENATOR MURRAY: I am sure we are all satisfied with that, Father. I think we are all absolutely in accord with that statement which you have made.

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(Father Schwitalla called attention to participation by the Public Health Service in planned parenthood clinics.)

REV. DR. SCHWITALLA: After having held out this hope for a future expansion of their opportunities to the members of an association specially interested in parenthood planning, and lest there be any misunderstanding of his meaning, a representative of the U. S. Public Health Service went on to discuss the mode of operation of the health centers as part of the venereal disease and tuberculosis control program but also as a part of a possible planned parenthood program. He said "In states like North Carolina, Alabama and several others which have decided that child spacing programs should be part of their public health activities, these health centers would house clinics for that purpose. It is the policy of the Public Health Service to cooperate with the health departments of the state in the programs they carry on for the protection and advancement of the health of their people. Any state deciding to develop a planned parenthood program could expect from the Public Health Service the same consideration that would be given to any other proposal in connection with its state health work."

The speaker was, of course, not alluding directly to S. 1606, because at that time the bill was not in its present form, but he was summarizing the "Postwar Planning of the Public Health Service," which has for its purpose "to make available to every family the health services it needs and should have." Besides, the definition of public health work as contained in the present bill is in complete harmony with the understanding of the public health official whom we have here quoted.

I know I am here raising extremely difficult issues. I know too that the Public Health Service has committed itself as a policy to cooperate with the various public health programs in the various states; so that, if in a state planned parenthood is defined by statute or regulation to be part of the state's public health program, the policy to which I have just referred in the quotation is carried out; that is, "It is the policy of the Public Health Service to cooperate with the health departments of the state in the programs they carry on for the protection and advancement of the health of their people. Any state deciding to develop a planned parenthood program could expect from the Public Health Service the same consideration that would be given to any other proposal in connection with its state health work."

On behalf of those citizens of our country who regard planned parenthood as practiced through contraceptive procedures or preparations as basically subversive of the moral law, as destructive of the welfare of the nation and of individual morality, I recommend and request changes in the content and the language of the bill, so that grants from the federal government to the states for public health services may not be used for the furtherance of programs which, no matter how contraverted the issues might be, are still condemned by the Criminal Code of the United States and are offensive to the convictions and beliefs of large percentages of the population of these United States.

SENATOR PEPPER: Excuse me, Father. Do you not think, having quoted the statement, you should give the author of the statement for the record? REV. DR. SCHWITALLA: I would be glad to give it to the secretary and to you, unless the chairman rules otherwise.

SENATOR MURRAY: That is satisfactory.

REV. DR. SCHWITALLA: If that is satisfactory, I do not see any special purpose in publishing the name of the author.

SENATOR PEPPER: If you are going to quote the statement and say that the person is within the Public Health Service, I think you should.

SENATOR MURRAY: I think if he gives it to us it is all right.

SENATOR PEPPER: Is there any reason for that? REV. DR. SCHWITALLA: I have a little feeling about that, Mr. Chairman, unless you want it done.

SENATOR MURRAY: We will not insist on it.

REV. DR. SCHWITALLA: I will give it to you right now, and if you will give it to the secretary, he can take the name right now. It is rather a high official in the Public Health Service.

SENATOR PEPPER: As far as I am individually concerned, I might not have an objection to the statement, but some one might have objection to the statement. It is attributed to the Public Health Service and to an official, so that if it is an objectionable statement it is the basis of a complaint against the department, and yet who the person is or the position he had or the authority he had is not revealed in the authorship of the statement. I thought if you were going to use it at all, it would be fairer to the Public Health Service to disclose who the person was.

REV. DR. SCHWITALLA: It was not a secret quotation at all, because it was made in a public address at the Waldorf Astoria, Jan. 24, 1945.

SENATOR MURRAY: I submit myself. Father, you are willing that the committee should have access to it. That will be satisfactory.

REV. DR. SCHWITALLA: Yes. I think a lot of people probably know this gentleman.

SENATOR MURRAY: Yes.

REV. DR. SCHWITALLA: I regard him as a friend of mine. He knows I am going to quote him. The amenities have been taken care of. I do not believe it is wise to spread this name abroad among other people. Some of the Sisters are in here and some of the Sisters know this man. There is no necessity of putting him into a certain category. I have a feeling that the Sisters might have a certain resentment about the statement. Why increase that?

SENATOR PEPPER: I cannot lend my acquiescence to the quotation of a public officer, and then a declination to give the official's name in a public discussion of the matter. I do not want to be in any sense of the word objectionable, but I just do not think it is of propriety to quote in the record in a prepared statement a public official of the United States Public Health Service and not disclose who the official is.

SENATOR MURRAY: Well, the committee will have access to it, and it seems to me that that will be sufficient. If, after further study, I should change my mind—

SENATOR PEPPER: As far as an individual member of the committee is concerned, I will not agree to be bound. If I determine that I desire to disclose the name of the person, Mr. Chairman, I shall feel free to do so as a member of the Senate and a member of this committee. I do not think this is a secret session, and unless there is some special reason, I do not see why we should do that.

SENATOR DONNELL: Mr. Chairman, I find myself in accord with the Senator from Florida. I do not mean to embarrass Rev. Dr. Schwitalla, but I do believe it is a matter of public concern, and I should feel exactly as the Senator from Florida has expressed himself.

SENATOR MURRAY: Well, Father, if you wish to comply with the request of the Senators, you may do so.

REV. DR. SCHWITALLA: Well, I certainly have no wish to stand on any constitutional rights here. I think I have them, but if the committee wants them, it was an address by R. C. Williams, M.D., Assistant Surgeon General, Bureau of Medical Services, Public Health Service. The address was made before the twenty-fourth annual dinner meeting of the Planned Parenthood Federation of America. The title of the pamphlet is "Responsibility for the Health of Tomorrow's Family." The

place was the Waidorf Astoria, New York, Jan. 24, 1945. I made it my business to find out whether the policy of which Dr. Williams here speaks, namely that it is the policy of the Public Health Service to cooperate with state plans without discriminating with reference to individual phases of a public health program, was or is the policy of the Public Health Service. I understand, from several inquiries, that it is, and that when funds are given by the Public Health Service to the states for the extension of public health services it is the state's program that is accepted. Now, that evidently is at the bottom of this whole situation, and I think it is not without some bearing on the whole situation here that we are discussing in this committee.

The Catholic Hospital Association regards it as one of the desirable features of this bill that it actually makes provision for the medical care of needy persons. Such a provision is, of course, indispensable in any comprehensive national health program. The question may, however, still be raised legitimately whether the indigent should be taken care of in his illness through the special provisions of a public assistance program or whether we should not rather make efforts to take care of the needy through the same program through which the contributor to the program, in this case the wage earner, is taken care of. As a matter of fact, at the present time, if the situation is carefully analyzed, the hospitals and the physicians who are most keenly alive to their obligations draw no line of distinction between the paying patient and the nonpaying patient. Even if the sarcastic cynic or the scoffer sees that such idealism is all too rare to constitute a real factor in the health care of the nation, it still remains true that the physician and the hospital and the nurse must treat a human being as a human being according to the basic requirements of any reasonable system of ethics irrespective of the paying capacity of the patient. Such has been the standard which the Catholic Hospital Association in conjunction with the other Hospital Associations has always held up as a basic principle for ensuring proper medical care of the indigent.

It is true that our public hospitals have been the bearers of the obligations of society to give hospitalization and medical care when it is needed to the completely or partially indigent, but in doing this I wish to visualize their functioning not as agents of government but as agents of society, assuming the obligations of society for its most needy members and thereby sharing with the voluntary hospitals which are also agents of society this prime and indispensable duty—a duty which arises from the fact that society has been inadequate to supply the needs to all its component members for food, housing, clothing, employment, recreation, this neglect, no matter how inevitable it might be, resulting in the sickness or disability of the indigent or the medically indigent.

It is worthy of note that S. 1606 sedulously avoids all direct reference to compulsion. The extent of the personal health service benefits are specially defined and these consist of general and special medical benefits and so on, all purchasable through funds authorized to be allotted to the "Personal Health Services Account," to which there is to be credited by the Secretary of the Treasury amounts equivalent to 3 per cent of the wages paid after a stipulated date with respect to employment but for wages only up to and below $3,600 per annum.

While, therefore, the compulsory element is understressed, it is clear that, through the tax on wages, the legislation becomes definitely compulsory and it becomes compulsory, moreover, with specific reference to health insurance as the procedure through which the contributing wage earner is to purchase his health protection.

Now, the interesting point about all of this to me is that there is really a compulsory or an obligatory feature in health care. It is man's duty to take care of his health and of the health of those who are dependent on him, and that duty is binding on him by virtue of the natural law which obligates every reasonable and rational human being and which exercises compulsion over man within the full limits of his financial and physical capacity to obey it. This obligation is the same kind of obligation as man's loyalty to his country, man's obligation to worship God, man's obligation to respect the rights of his neighbors. The compulsion arises from the full effectiveness and force of the natural law and from its universality. Hence man is a trustee of his life and health and not the owner of them, a trustee for the health of the members of his family and not the owner of that health. If man wilfully and maliciously or through culpable negligence disregards his own health or that of his family, he is subject to severe censures before the tribunal of God no matter what individual persons might think of him. The compulsion in this obligation, like so many of the obligations of the natural law, though binding on the individual, still leaves the individual free, leaves him free in the full enjoyment of a vast freedom because the obligation is not specific with reference to this or that method of living up to his obligation.

Man is not obligated to choose one method rather than another of safeguarding his health. Man is not even bound to use the best possible means or allegedly the best possible means of safeguarding his health. He may, as a matter of fact, choose to safeguard it at the cost of seemingly disproportionately large inconveniences or sacrifices. Moreover, the obligation of man safeguarding his health may have to yield to higher obligations, as for example when a man deliberately chooses to expose his life to danger in the defense of health or life of a dear one or of his country. This means also that health, and, for that mater, even life is not an absolute good but only a conditional and a contingent good. All of this means that the observance of man's obligation to safeguard his health, though the obligation is a compelling one, is still subject to the prudence, the good judgment, the free choice of the individual who conforms to the basic law. There is compulsion, therefore, with reference to the safeguarding of man's health; there is no compulsion arising from the natural law to choose this rather than another form of providing for his health.

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Is it apparent that the system of private initiative in medicine has so completely failed as to justify this extreme compulsion? Moreover, is it apparent that a compulsory system is going to be effective in remedying the alleged or even the acual shortcomings of a system of private initiative? Is it apparent that all the individuals whose payrolls are going to be put under contribution are so dissatisfied with the present methods of taking care of one's health that they will willingly undergo the serious inconveniences which are implied in a compulsory system such as is here projected? Is it apparent that society is so seriously endangered by the system of private initiative as to make this compulsory system immediately imperative? These are the questions which, I believe, must be answered before we can justifiably pass a law such as we are here discussing.

The compulsion of which we are here speaking implies the giving up of considerable freedom and the relinquishment of considerable responsibility. We cannot create an intelligent and enlightened and a responsible citizenry unless we entrust duties and obligations to that citizenry. To remove responsibilities from man is not to elevate him but to degrade him. To take away from him the obligations of maintaining himself and his family in a state of refinement and fuller living is not to foster that man's character but to weaken it unless the removal of responsibility from him is accomplished with a clearer understanding of the reasons why that relief is given to him. To make a strong nation requires that man must be given responsibility rather than to have responsibility taken away from him.

If society could not create and could not maintain the processes by which the human being can meet this obligation of his health care, then the government would have to give aid to society and ultimately to the individual so that society might meet this obligation. But even in that case the government would not be permitted in any reasonable interpretation of ethical principles to ride rough shod over the obligations of citizens but would have to respect the rights of human beings as far as this is possible under the concrete circumstances of each given situation.

Two questions present themselves in the face of all this: 1. Can society create and maintain the processes by which in our present question the health of the nation can be safeguarded? 2. What particular characteristics and capacities of the individual must be protected if government feels itself obligated to interfere in the individual's responsibility for his own health care and the care of his dependents?

With reference to the first question, can society really create or maintain the processes necessary for safeguarding the health of the nation? If our question pertains to American society, my answer is unhesitatingly and unqualifiedly an emphatic yes. It has done so and one by one disease entities have received mortal blows from the votaries of American medicine, from the research workers who understand the biologic processes that have yielded such amazing triumphs. It is now said that through the aid of government our schools of medicine can be still better protected just as our research can be more emphatically fostered and the pertinent sections of S. 1606 are significant and at the same time most valuable contributions to afford the proof that society and government in their wisdom have realized that through federal aid in these two important

areas much more can be accomplished than has already been achieved. It would seem, therefore, that with miracles such as we are here discussing already accomplished, no one would dare say that limits have been set to the effectiveness of private initiative. Through the glorious pioneering of our American investigators, and through the discoveries and the daring aggressiveness of those who widen the horizons of man's thinking, it should certainly be possible to bring the whole American people under a voluntary health program, since problems of so much greater difficulty have already been successfully solved. The proof, therefore, cannot be brought and, to my thinking, will not be developed to show that society is incompetent to cope with this problem through the processes that have already been employed in the solution of much greater problems. If we can achieve our purpose through the encouragement of voluntary initiative, we shall strengthen the sense of responsibility of the individual, we shall safeguard the dignity of the individual as that of a person who is intellectually and emotionally competent to make his own choice concerning the manner in which he obeys the natural law to which he is subject. From all of this it becomes apparent also what features must be preserved in the reemphasis on the importance of each one's obligation to fulfil this basic responsibility.

Once it is admitted that a compulsory national health program is to be initiated, then it can easily be seen that such devices as are contrived in S. 1606 for the administration of a national health program become all but necessary. If there is to be, as S. 1606 contemplates, a compulsory national health program, I for one would have to insist that responsibility for it should be centralized, that there should be drafted rules and regulations which would ensure a measure of uniformity in the whole program, that these rules and regulations should be such as to be more or less universally applicable and that the rules and regulations be written so as to simplify administrative procedure. I can easily understand that routinization, mechanization, standardization of the procedures should be effected so that the costs of the program may thus be minimized and so that, furthermore, the most easy approach be made to the generality of the people whom the program is devised to protect. Hence I can see why so much power should be entrusted into the hands of the Surgeon General and why there should be the special kind of an advisory council which the bill creates and why there should be certain kinds of appeal bodies and why the Surgeon General should himself be the arbiter, legally constituted, of controversies which his own actions may have evoked and why all the other numerous provisions of the bill should follow as necessary corollaries from the necessary concentration of administrative power.

But think of what all of this is doing, first of all, to the ensured person; secondly, to the professions of medicine, dentistry and nursing; thirdly, to our hospitals, and, fourthly, to society at large. It has been said and we must pay our respects to the writers of the bill for at least thinking of this concept that the methods of administration should be drafted so as to ensure: "the prompt and efficient care of individuals; promote the personal relationship between physician and patient; provide professional and financial incentives for the professional advancement of practitioners, and encourage high standards in the quality of services." But, frankly, I cannot help but wonder whether the relationship between physician and patient can possibly be promoted through such a system as S. 1606 proposes. It would seem to me that at ever so many steps in the contact between patient and physician there would be injected into the patient-physician relationship extraneous considerations of the most diverse kinds. The physician would be expected to make reports to his government; to maintain records quite different from the case histories which he now maintains and which would be prescribed for him; he would lose a great deal of contact with his patients through the fact that he receives a stipulated sum from government sources. Since he is being paid on a service basis and on the basis of a fee schedule, he would be bound to lose the proper attitude toward professional remuneration, which in any true concept of medical care is regarded only as a token payment and not in any sense as a wage or salary or stipend but only as an honorarium. All of these consequences would be found to follow as I see it, and from all of them there would also necessarily be found to result a deterioration in the character of medical practice. There would almost of necessity be a commercialization, and the material outlook on practice which would thus be fostered might actually result in serious consequences to the whole concept of medical care for the American people.

As for the professions, I wish again to express my appreciation of the fact that the hope was formulated in the bill that there would be no enslavement of the medical profession or of the other health caring professions through S. 1606. I wish I might be able to share this optimism, but, as I see it, centralized control would be inevitable and that means control through regulation, and control through regulation means a curtailment of freedom of action, and such a curtailment in turn means a loss of interest in one's professional activities. And so a chain of successive causes and effects would be initiated the end of which, taking human nature as it is, would lead to nothing else but what has been eloquently envisaged by others who have testified before this honorable committee.

There is a surprising, astonishing and unique feature in S. 1606 the full import of which I have thus far failed to fathom. In the old age and survivors program as well as in the unemployment program I find that the benefits all take the form of a direct cash payment to the beneficiary. In this way the dignity of the beneficiary is safeguarded. The government indicates to him or to her that the beneficiary is trusted to use his ingenuity or his initiative or his honesty to provide for himself through the medium of purchase with these cash benefits such commodities as the beneficiary chooses to purchase. For some reason or another that I cannot understand, the situation is quite different in this health insurance. The benefits take the form of services to the beneficiary. The strange thing is that the services are not furnished by government officials, at least according to S. 1606, but by those doctors, dentists, nurses, hospital administrators, laboratory technicians who have signified their intention of obeying certain regulations laid down by the Surgeon General in pursuance of which they will furnish their respective services to, not the government, but the patient.

In the old age and survivors program and in the unemployment program there is a relatively simple contract, a contract between the employee who in cooperation with his employer pays a certain amount of money into the federal treasury, and the federal treasury in turn, on the occasion of a predefined contingency, makes a corresponding payment to the individual citizen. In the health care program, however, there is a tripartite and probably a multipartite contract. The least complicated situation is a contract between the governmental agency, the physician or hospital or nurse or dentist and the patient. To make matters worse, this tripartite agreement is superimposed on a basic and fundamental mutual contract, the contract existing between the patient and the nurse. There are complexities developing from this pyramiding of responsibilities which are most difficult to understand. Let us take the patient-physician relationship, as an example, particularly apt since in the bill itself one of the purposes is defined to be the fostering of the patient-physician relationship. In its simplest form that relationship demands a man to man contract, with the patient having a certain priority of rights because he is in need, and the doctor having a priority of privilege and obligation because of his professional standing and his ability to give the patient what the patient needs.

Over and above this relationship, the patient who is a wage earner and is employed has entered into another contract with his government by virtue of which the government will supply funds to an as yet indetermined individual under certain contingencies. That is contract number two. Now the patient chooses a physician, let us assume within the panel. That contract is something quite different from the ordinary contract of the patient-physician relationship, and hence it is contract number three. The reason why this contract is different from the ordinary contract implied in the patient-physician relationship is that an extrinsic agency, now the government, makes itself responsible for what is definitely called "pay" in the bill and because another extrinsic agency, the Public Health Service under the Surgeon General, makes itself responsible for regulating in a number of very specific ways the relationship between the patient and the physician. There may ensue a contract number four, if a patient is sent to a hospital and the hospital is chosen under the provisions of the bill, with contract number five if the patient requires a nurse, and contract number six if the patient requires the need of a consultant or specialist and probably contract number seven, because the bill makes special provision for laboratory benefits. And all of these different contracts are modified and influenced by the other provisions of the Social Security Act, particularly eventual compensation for the wage losses due to illness.

Why all of this is necessary is very hard to see, and I still feel that if there is to be any compulsion with reference to the elimination of a choice as to the method by which I secure

my health protection I should prefer a straightforward cash indemnity basis. I do not see why the freedom of the professions must be endangered in order to safeguard the health of the nation; nor do I see why we have to endanger one of the most splendid relationships in our democracy, the relationship between the private agency and a governmental agency; nor do I see why we have to inaugurate this complicated system of appeals in order to get justice for the patient or the doctor or the nurse or the hospital; nor do I see why we have to create the complicated snarls in our responsibilities which arise from an unnecessary multiplication of contracts.

There are other benefits that will come from a cash indemnity, the elimination of complicated administrative machinery, the conservation of the freedom of choice of the individual, the justifiable and reasonable compliment paid to the citizen when we treat him like a matured adult capable of self determination and capable of managing his own affairs rather than treating him as a helpless ward of the government.

I might add, gentlemen, that giving up freedom might be too great a price.

Finally, the question must be raised Is it really the function of government to make itself the guardian of its citizens to the extent that would be implied in such a vast health program? There is so much to be done by government, so much stimulation to be given to all kinds of projects and interests, that one wonders whether government should invade the intimacies of one's home and family life to the extent that would be necessary. I know there have been countries in which all of this is said to have worked successfully, but the transplantation into this freedom loving country of ours of foreign and exotic patterns of social behavior has been tried recently enough, and surely not one of us has had his love for this democracy of ours weakened or diminished by the experiment. We respectfully recognize the successes of other countries and sympathetically try to understand their social procedures, but that sympathy will not blind us to our own needs and wishes or to our own character as a nation any more than the contemplation of the alleged successes of other lands would stimulate our greed or our envy.

In place of subjecting S. 1606 to further analysis, I should like to make bold to suggest that we can all probably agree on a set of criteria by which we would measure a national health program and convince ourselves and others of its feasibility, or its desirability, or even its complete effectiveness:

1. I would say, first of all, that a national health program must take into account the moral and the social obligation of each individual to provide for his own health as far as his financial resources, the circumstances of his life, his physical strength, might permit him to do.

2. I would insist that the method by which he carried out this obligation should be a matter that is to be left to his own prudence and initiative and, let me add, responsibility.

3. I should wish to insist that it is the duty of government to facilitate my observance of my obligations when and if the fulfilment of my obligation becomes too onerous. This means at least two things: first, that the government will really grant me a subsidy of some sort when I am really in need; and, secondly, that in periods when I am not in need I shall recognize and carry out my own obligation to provide in advance for a moment of emergency. Only when I cannot carry out that obligation will the government really grant a subsidy.

4. Facilitation, however, in the observance of an obligation should not and must not mean an exemption from a responsibility; it must not facilitate the individual's shirking of his responsibility but rather must it assist the individual to the fuller realization of his own obligations.

5. I should like to insist that the obligation to safeguard one's own health and that of one's dependents is not an absolute but a conditional and a contingent one. A national health program must take this into consideration and demand not too great a price for health security.

6. I should like to insist that, since the personal relationship between patient and physician is basic and fundamental in the ethics of medical practice, the administration of a national health program must be simple, uncomplicated, direct, so that as few as possible extrinsic influences might be injected between the patient and the physician.

7. It would seem to me that a national health program should not be a substitute for the procedures and the methods which have resulted in the present high standard of health care of the American people but should be a supplement to the existing procedures and methods. This implies the preservation of many tangibles and intangibles in our culture and civilization; the concepts of professional life; the freedom of professional action for the physician and the dentist and the nurse; the maintenance of intimate relationships confidential in character in the patient-physician relationship; the freedom of the patient's choice of a doctor and of the doctor's choice of patients; the concepts of professional competence as implying ever so much more than merely formal schooling and success in skills; the place of the hospital in the community and its relationship to the individual patient whom it receives. These and ever so many other similar features of our present exalted heritage in health care deserve the utmost caution in their evaluation and in their possible modifications for fear that, by precipitate and imprudent changes, we may not so much change but rather destroy them.

8. The highly desirable social purpose of universal coverage must be secured by a program which will embrace the individual who can fulfil his obligation through his payment for his health security as well as the individual who by reason of his circumstances cannot pay and for whom society has made itself responsible.

9. Finally, it is assumed in all of this that government will aid in the creation of health facilities and that the development of health caring personnel will, under the demands of the moment, be looked on as the joint responsibility of the voluntary and the governmental agencies in a program of mutual respect and cooperation.

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I have no objection to a national health program. But, if you come along and ask me about a national health insurance program, that is dangerous. The moment you get into that insurance question you are intermingling issues—unless it is insurance on a cash indemnity basis—and the moment you get into the benefits as to services to a hospital, patient and the doctor, I cannot go with you.

SENATOR DONNELL: In regard to this book from which I read, and I am not undertaking to vouch for it or detract from it, this is a book, however, that was issued by the International Labor Office and distributed in the United States by the International Labor Office, whether or not the conclusions I drew from it are correct, I don't know. I was greatly impressed by your comment at page 19 of your statement about the danger from a financial standpoint. I refer to the results in the voluntary hospital from this effort to hold down these expenses and require them to consider $7 full reimbursement for the cost of essential hospital service. I think you have given us food for thought which I confess never occurred to me. I can see $7 not being enough, but I did not have enough of a far seeing eye to see the matter you point out as to the danger to the hospital service.

REV. DR. SCHWITALLA: When Blue Cross began, we had 10 per cent of our patients from Blue Cross, and the rest of them, let us say, 80 per cent, were paying patients and 10 per cent were entirely free patients. It did not make much difference whether we took them from Blue Cross at a little less than hospital costs, but now, when Blue Cross is getting to be a larger and larger factor, and when you are running up to 60 and 70 and 80 or even 90 per cent on Blue Cross patients, unless Blue Cross gives you the cost of the hospital, who is going to give you the rest of it?

SENATOR PEPPER: About how much a day do you think would be a proper figure if we were to adopt this bill?

REV. DR. SCHWITALLA: We have figures on different localities. Our costs in some areas in different hospitals run quite definitely as low as $6 per day. There are areas in the United States like that, if you can make the areas small enough. There are also other areas and other hospitals where the cost runs to about $20 a day. Take the unearned value of real estate. If you have a hospital located in one of the most costly places in New York, it is uneconomical to tear it down and put it some other place. That is one of the problems that varies. In our hospital we need an encephalograph but I have not had enough money to buy one. It costs $1,400, but there are other things that I need more.

SENATOR DONNELL: May I put into the record one item from the International Labor Office studies and reports, issued in Montreal in 1942? "Compulsory social insurance began nearly sixty years ago in Germany, and the legislation of 1883-1889 associated with Bismarck has, more than any other, influenced the development of social insurance."

REV. DR. SCHWITALLA: I think that is true.

SENATOR MURRAY: I wish to offer in the record at this point a statement by Kenneth C. Crain, vice president and eastern editor of *Hospital Management*, a magazine of general circulation among hospitals, on Senate Bill 1606. I am sorry I cannot vouch for the citizenship of this gentlemen in Missouri, but I believe it is not necessary.

MAY 7, 1946

HONORABLE JAMES E. MURRAY Presiding

PRESENT: Senators Murray, Aiken and Donnell.

Statement of Right Reverend Monsignor John O'Grady, Secretary, National Conference of Catholic Charities

MONSIGNOR O'GRADY: Before entering into a discussion of the question of universal coverage against the hazard of ill health, it would be well for us to keep in mind a few fundamental principles of social philosophy. In our society—in fact, in any society that is based on a clear understanding of the infinite worth of human personality—it must be assumed that our first objective must be to encourage the individual to provide health protection for his family through his own effort. It follows that we must also encourage the individual to enter into associations and organizations of his own choosing for the purpose of providing health protection for himself and his family. Government should encourage and promote such voluntary efforts on the part of the individual. It should not seek to supplant the efforts of these organizations, for in doing so it would be striking at the very foundations of a democratic society. Government, therefore, has to proceed very carefully in the implementing of voluntary effort in the field of health protection.

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The federal government, through the Social Security Act, is now providing grants-in-aid to the states to enable them to provide assistance for the needy aged and for dependent children in their own homes and the homes of relatives. If the federal government is willing to aid the states in providing food, clothing and shelter for the aged and for dependent children, it should also be willing to aid them in providing medical and hospital care for these two groups.

In building a program of health security we should be sure from the very beginning that payroll taxes are sufficient to support an adequate system. An inadequate health security program will be of little benefit to the American people. Many of the problems that we are now facing in the consideration of this program center around the assumption of inadequate funds. Why do we have to have so much centralized control over administration? Why do we have so many rules in regard to hospitals and in regard to medical fees? Is it not due to a desire to spread an inadequate fund thinly over a very large number of people? I believe, therefore, that it is most important that we should begin our national security program with adequate benefits based on an adequate payroll tax. And I think the people studying the technical end of it should be required to explore the thing fully. Our experience is limited.

In the field of health security the federal government is entering into a new field and yet those who are thinking of it in terms of administration are people who have been patterned by a public health background, and at times I have been critical of the public health service and I am still critical of it in lots of respects. It does, at times, tend to become very bureaucratic even in its own hospitals. They think in terms of a program administered entirely by government. They think of a government official rendering decisions without much respect for democratic processes, and here again you have to think more and more about democratic discussion with the various groups concerned. Of course it will be quite clear that, if a government official tries to impose his views without respect to democratic processes, the people and their representatives will not accept them, so one gets political pulling and hauling as a substitute for democratic processes on a factual basis with the groups that are immediately concerned.

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SENATOR DONNELL: Monsignor, I understand that not merely do you regard these voluntary methods and programs of insurance as of historical value, as the chairman put the question to you in substance a few minutes ago, but you responded you hope that they will be of continuing value in the future; is that right? MONSIGNOR O'GRADY: That is right.

SENATOR DONNELL: And you do not favor the dissolution of these voluntary programs. That is correct? MONSIGNOR O'GRADY: That is right.

SENATOR DONNELL: And then your judgment is that they can be organized in as a part of the governmental program? MONSIGNOR O'GRADY: That is right.

SENATOR DONNELL: Now, Monsignor, one question was asked by the chairman of you a little while ago as to whether the government has not in every way encouraged these voluntary organizations. I am not saying that the government may not have done so in some instances. I do not know about that. But there is one instance, is there not, Monsignor, in which the government might very well have had additional encouragement; namely, by providing for payroll deductions for the voluntary agencies from the compensation paid the governmental employees? That would be quite a considerable encouragement to them, would it not? MONSIGNOR O'GRADY: That is right. I think that is one important step. They ought to be encouraged to keep the chance of surviving. They will have to provide for some sort of reimbursement.

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SENATOR DONNELL: Monsignor, may I ask you this question: I understood you to say something to the effect a few minutes ago that you would not favor the idea of compelling a man to pay twice. That is, if he is in a voluntary system and adequately insured, I understand you would not favor requiring him to pay again for insurance he would not need? MONSIGNOR O'GRADY: That is right. There should be some plan for reimbursing that man or encouraging him to continue his association with his present group. I think that this is the whole question of rates, that this should not be written into a bill. I think we ought to work that out. We shall have to work it out, an adequate system of compensating hospitals. Otherwise, if we are going to have a sort of system that simply pays the hospital for all their patients, let us say, $4 a day, you are going to put the hospitals out of business. There is no question about that. SENATOR DONNELL: Yes.

MONSIGNOR O'GRADY: Now, as it stands at the present time, a lot of the hospitals go along with that, because most of their care is not in that field. They find they go along with an inadequate system of compensation under workmen's compensation in the states. It simply means that the hospitals are subsidizing private industry, because, after all, that affects the industrial accident rates in the states.

SENATOR DONNELL: Monsignor, have you worked out in your own mind the machinery of working into this governmental plan these voluntary organizations? Have you gone into that? MONSIGNOR O'GRADY: I have in some detail. I have been discussing it a good deal with a number of the people concerned. SENATOR DONNELL: Yes.

MONSIGNOR O'GRADY: Now, I think that there are some details. When I showed this testimony of mine two weeks ago to a well known expert in the field, one of the best known, he said "I think you have something there." And he said "I think you need to spell out the details of your organization a little bit more. You need to spell out the details of the local organization a little bit more." You notice I believe in a national local system instead of a national state system. I think if you get into dealing with states it becomes sufficiently complex, and I think on the whole the general principles of my underlying point of view are that I think that is rather clear.

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SENATOR DONNELL: On this matter of advisory committees, I noted your comment, which I think is well taken, that there is a tendency on the part of appointive power to appoint advisory committees, to appoint persons he thinks will agree with his views. He is not apt to appoint antagonists. MONSIGNOR O'GRADY: And he presides in the meetings.

Statement of the Honorable Arthur Lewis Miller, A Representative in Congress from the State of Nebraska

DR. MILLER: I am a physician. For the past six years I have been in Congress; I have been state health director. I was president of the State Medical Association in Nebraska and a fellow of the American College of Surgeons, and I think I know more about being a physician than I do about Congress.

I have read the bill carefully and wish to address my remarks to title II of the bill, which is the prepaid personal health service benefits. It is my humble opinion that, if this section of the bill was adopted, the family physician of every citizen would be a memory of the past. There would be a new character on the scene—Uncle Sam, M.D. I believe that this section of the bill would not only regiment the citizen and all health activities but would provide a political and socialized medical care program. It would provide for a form of regimentation of medical service administered from the national level. It would be expensive, wasteful and time consuming. It would be ill suited to the care of the sick in general and medical emergencies in particular. Such a program could not be administered in a democratic manner, pleasing either to the patient or to the physician.

The quality of medical service to the patient would be strained and inferior in the beginning and would rapidly deteriorate. Medical research would be curtailed. Medical education would be static, and medical progress in general would be set back many years. I say this, Mr. Chairman, because that has been the experience in those countries where regimentation of medical services has been tried.

Speaking of experiences with socialized medicine, I have had the privilege of making three trips to Europe.

(Dr. Miller stressed inferior medical service under European plans.)

I am certain, Mr. Chairman, that this national health bill does not spring from our traditions or from the public spirit. It is an offspring of foreign ideology, first brought to perfection by the German statesman Bismarck. In every country where Fascism, Nazism and Socialism prevail, there is socialized medicine.

I would remind the committee that the United States gained its leadership in medical education and care by methods that have been tested in the crucibles of time and economic hardship. This national health bill would abolish the voluntary control and inspiration that have brought medical education, hospital management, drug purity, research and medical service to their present high level. The best medicine in the world is practiced in the United States. We have the finest hospitals, medical equipment and technics in all the world. This bill would completely revolutionize medical practice, medical schools, hospitals and technical research. Should we not consider carefully the progress made in the United States under our free medical enterprise before we adopt a system controlled by salaried political bureaucrats? Certainly this bill would put the life of every citizen in the hands of a medical czar, not necessarily run by doctors, but controlled by politicians who hang around the court houses of the country.

I have read the statement of the sponsors and authors of the national health bill.

1. They state: There is complete freedom of choice of doctor by patient.

This is incorrect. If either the patient or the doctor named on the panel by the Surgeon General declines to accept the other, the patient is assigned to some other doctor.

2. They state: There is complete freedom of choice of hospital by patient.

This statement is incorrect. There is no provision for freedom of choice of hospital. The entire system is under regulation by the Surgeon General.

3. They state: There is freedom of medical practice for the doctor.

This is misleading. The plan is so extensive that in time there will be no private practice.

4. They state: There is freedom of types of remuneration for the doctor.

This is misleading. The doctor is forced on a salary or on a fee basis or on a combination of the two, as determined by the Surgeon General, who approves the fee tables.

5. They state: There is freedom of types of remuneration for the hospital.

This is incorrect. Hospital rates are determined by the Surgeon General with the approval of the Social Security Board.

6. They state: No doctor is forced into the insurance system.

This is misleading. He must go into the insurance system or be forced economically to cease the practice of medicine.

7. They state: No doctor is forced on a salary basis.

This is misleading. The doctor is forced on a salary or on a fee basis or on a combination of the two, as determined by the Surgeon General.

8. They state: Arrangements for obtaining medical, laboratory or hospital care would be essentially as they are now in this country except as to payment out of insurance fund.

This is entirely incorrect. The whole medical system is supervised, regulated and controlled by government.

9. They state: Voluntary hospitals are eligible to participate in the plan.

This is misleading. They may participate if selected by the Surgeon General.

As the state health director in Nebraska for two years, I know that we have advisory committees. We were called in occasionally to Washington but merely to O. K. some plans that had already been drawn up. We had no force in objecting. I would object to a number of things, but the plan was drawn up and here it is. You must take it.

In the state health directory in Nebraska we had a maternal, child health department in the Labor Department and the United States Public Health Service. We had to keep two sets of books. They were competing with each other as to how much money they would offer the state, overlapping and duplicating efforts of each other. We had immunization and vaccination and so forth. The United States Public Health Service has been doing it for years. The Childrens' Bureau comes in and offers you a little more money. "Accept this and we will give you a little bit more."

We had two sets of nurses and inspectors, who would come around and inspect the work that you were doing under the Children's Bureau and the United States Public Health Service. Both of these agencies had their advisory councils, which were merely figureheads to O. K. that which was already set up in Washington.

SENATOR DONNELL: I wanted to read a couple of paragraphs here from a statement by J. G. Crownhart, who was secretary of the State Medical Society of Wisconsin, located at Madison. This was published in 1938 and I want to ask you whether or not this concurs at all with your view as you personally saw conditions in Europe.

He says "Again and again the observer is impressed that the standards of medical and hospital service in Europe are not generally those of America. The director of one of the large public health institutes in Denmark pointed out this fact and referred to a lessening in the quality of teaching service in their medical school as one of the by-products.

"'Sickness insurance is a leveling disease,' said this professor, who had visited this country on occasions. 'It assures the mediocre physician just about the same reward as he would gain for outstanding service if he were to have time. The incomes tend to be leveled, but that is not all—the tendency over the years is to level the service to something that is neither bad nor good. But the incentive is gone and we develop fewer brilliant minds in our teaching centers and America catches the lead in health and methods to regain.'"

Generally speaking does that accord with your observations, Doctor? DR. MILLER: Senator, I was shocked when I saw some of the treatment being given to the patients in Europe, treatment that would not be followed in this country even in our poorest hospitals. The term "disability" and "neurotic" came out of Germany when they adopted compulsory health insurance. Patients were paid when they were unable to work, supposedly, and many of those folks developed a disabling illness. Neurosis of various types developed. This was in order to get the physicians to issue a certificate that they were unable to work. Europe lost its position of importance in postgraduate work at about 1920. Before that time many American physicians went to Europe. I went because I thought it would give me a little prestige in saying that I had attended a clinic in Budapest, Heidelberg and Hamburg, which I did, but I found in 1927 and again in 1935 that we could get far better training in America than we could in European countries.

SENATOR DONNELL: You referred also in your statement to the number of bureaucratic administrative officers and so forth who were necessarily to be involved in a plan of this kind. I am going to read you just one more paragraph, if I may, from this same article by Mr. Crownhart, appearing on page 15. He says "It is also to be noted that in the experience of Europe there will be an employee in the system outside of the delivery of actual medical service for at least every 100 persons insured." While the nature of the work of such employees is held for later discussion, our concept of this legislation in its basic proportions is that it must include the government as both the agent for the collection and the disbursement of the premiums and, furthermore, as a vast employer for its necessary administration.

I assume, Doctor, that your observations and views are that there would be a great number of employees necessary in the administration of the system which undertakes to require a compulsory payment on the one hand by from 107 to 112 million persons and on the other hand the rendition of service to the equivalent number and perhaps even more. Do I correctly state your views? DR. MILLER: There must be necessarily many many federal employees to handle such a system.

SENATOR DONNELL: I observe remarks along those lines in a book entitled "Compulsory Health Insurance in the United States," issued in 1943, the author of which is Herbert D. Simpson, emeritus professor of public finance at Northwestern University. The following statement appears therein: "One such consideration is the fact that if we assign this problem to the sphere of governmental responsibility it will mean probably the greatest expansion of the federal bureaucracy that we have ever witnessed in peacetimes. The number of employees required to administer such a system would be difficult to estimate. There are between forty-five and fifty-five million gainfully employed persons in the United States at the present time. This, with members of families and dependents, would swell the number of potential beneficiaries to over 100 million, depending of course on the type of coverage

embraced in the system. The number of illnesses per hundred members in Germany ranged over the period 1925 to 1934 from 0.6 to 52.4, which would suggest something approaching 50 million cases per year in the United States. All of these cases would have to go through the process of certification, filing, inspection, payment, complaints and adjustments. If an adequate field and inspection staff were not provided, it would mean wholesale profiteering at public expense. If an adequate staff and organization were provided, it would mean an army of government employees." Doctor, does your general opinion coincide with the statements made in the book I have just read from? DR. MILLER: Yes, there must necessarily be a large number of federal employees to supervise this system.

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DR. MILLER: Senator, you would not change the shape of your nose or the color of your hair because you happen to be born of a certain group. You cannot change that in medical illnesses. You are born with a crack in the convolutions of your brain or you are not. When they get out of a groove and get into something else, they crack up and go to pieces.

SENATOR MURRAY: But a lot of people crack up in this country because of the system that we have to live under whereby two or three hundred corporations rule the country and great masses of our people are denied adequate income on which to live and maintain their families and educate and care for their children and give them proper medical care. People crack up under that kind of a system too. DR. MILLER: Oh, yes, indeed they do. But the thing I am getting at in this compulsory medical program, why confine it to medical care? Why not go the whole gantlet and give housing and food and completely regimentize and sovietize the American people. If that is what the majority want that is what we will do.

SENATOR MURRAY: The majority want a democratic system. They do not want a system whereby two or three hundred corporations rule the country or whereby monopolies are expanded to such a degree that the great masses of the people are unable to live with any degree of prosperity and good health. I think the trend toward collectivism in this country has been brought on by industry. The great growth power, wealth of corporations and the monopolies of the country, they are things that have brought these conditions to prevail in this country more than the people have. The people are seeking to avoid it. They want to live under democracy.

SENATOR DONNELL: Mr. Chairman, pardon me a second. I would like to have the record show that my silence here is not any agreement to the proposition that this country is ruled by three hundred corporations.

SENATOR MURRAY: I do not think that is necessary, because the record is pretty well filled with evidences of your desire to oppose and I have given you full liberty to oppose and I welcome all of your cross examinations and your efforts to examine the problem thoroughly.

Statement of Leonard W. Mayo, Chairman, National Commission on Children and Youth, Accompanied by Henry F. Helmholz, M.D., Section on Pediatrics, Mayo Clinic

MR. MAYO: I appear in behalf of and with the authority of the National Commission on Children and Youth, formerly the National Commission on Children in Wartime. This commission is composed of approximately 100 men and women prominent in education, public health, medicine, social service, labor and civic activity. Such groups as the American Association of University Women, the Child Welfare Division of the American Legion, the National Council of the Young Men's Christian Associations, the National Committee for Mental Hygiene, the National Congress of Parents and Teachers, labor unions and the American Farm Bureau Federation are represented on the commission, plus some other organizations. The original commission was appointed in March of 1942 following a meeting called by the United States Children's Bureau of the Department of Labor to consider the critical and emergency problems of children during wartime.

(Mr. Mayo presented data compiled by the commission with respect to the need for increased maternal and child health services and for services to crippled children.)

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The members of the commission are persuaded that every child born under the American flag is entitled to the best and most skilful medical care our country can provide, regardless of the size of his father's pocketbook. The commission has estimated that for the fiscal year 1946 the maximum authorized for appropriation from federal funds for grants should be raised by approximately 50 million, 25 million of which should be allocated to maternity care and care for infants and preschool children, 15 million to preventive and corrective health services for children of school age and 10 million for dental care. It is further recommended that federal funds for crippled children's services should be increased by at least 25 millions broken down as follows: for orthopedically crippled children, including those with cerebral palsy, 5 million; for children with other physically handicapping conditions, 5 million; for children with rheumatic fever and heart disease, 15 million.

(Senator Donnell brought out that the group was selected by Miss Lenroot.)

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SENATOR DONNELL: Had there been some criticism you had heard of directed against the commission on the ground that it was the organ of the Children's Bureau in lobbying affairs, lobbying matters? MR. MAYO: I never heard that. As a matter of fact, the commission had not lobbied, and I did not hear that criticism.

SENATOR DONNELL: Was its function at or about 1944 and from then until the present time largely the influencing of legislation? MR. MAYO: I would say not. I would say that its purposes and functions throughout have been largely to bring together information with the hope that that information would so inform and equip competent and knowledgeable persons and groups in the country that they might, on their own, take such steps as their wisdom and discretion indicated in providing more adequate services for children.

(Senator Donnell brought out that Miss Lenroot's appointee acts as secretary for the committee headed by Mr. Mayo.)

MR. MAYO: She is on the staff of the bureau.

SENATOR DONNELL: Except that she is on the staff of the Bureau and is paid by the Bureau and not by the Commission? MR. MAYO: That is correct.

SENATOR DONNELL: You have stated that the commission has no funds, I believe. Am I right in that? MR. MAYO: That is right.

SENATOR DONNELL: Who pays the expenses of the National Commission on Children and Youth? MR. MAYO: The printing of such material as you see here has been done by the Children's Bureau.

SENATOR DONNELL: Do you know who paid the expenses of the circulation of it [a pamphlet]? MR. MAYO: I take it that the Children's Bureau did. I do not know to the contrary.

SENATOR DONNELL: With the exception of the traveling expenses to which you referred, and the expenses of mimeographing your own testimony here today, is it a fact, Doctor, that all the expense of the National Commission on Children and Youth within the last year has been paid for by the Children's Bureau of the United States Department of Labor? MR. MAYO: I would add there are other office expenses borne by the Child Welfare League carried on in my office, such as mailing out letters. I take care of the postage and we share it in that way.

SENATOR DONNELL: But the Children's Bureau of the United States Department of Labor has paid the expenses along the lines of what you have indicated? MR. MAYO: That is right.

SENATOR DONNELL: And the commission itself has no resources whatsoever; is that right? MR. MAYO: Has no resources of its own.

SENATOR DONNELL: Doctor, do you not think it would be somewhat more fair to the general public to reveal in the name of the commission the fact of its very close connection financially and otherwise with the Children's Bureau, so that the country might understand clearly that this commission is actually extremely closely related to a governmental organization, the Children's Bureau of the Department of Labor, which understanding, of course, is not obvious at all from the name which the commission now bears? MR. MAYO: From the reports from the paragraph you read in this booklet, which, as I stated, has been distributed all over the country, it is pretty clear, of course.

SENATOR DONNELL: Well, I do not think, Doctor, with all due respect, that the name of the organization, namely the National Commission on Children and Youth, is at all descriptive of the fact that this organization is very closely affiliated with the Department of Labor, and I do not mean this critically. MR. MAYO: That is all right.

SENATOR DONNELL: Following a meeting, but I do not observe any statement here as to who it was appointed the commission, nor any of the facts that have been developed this afternoon as to the financing of the commission. I simply present to your consideration the query for your own judgment or response, such as you may deem proper, as to whether you do not think it would be somewhat more fair to the public

if the name given to your organization preserved, as it did at the outset, the name "Children's Bureau" as a part of the name so that everybody could know that this was closely affiliated with a governmental department. That would be a policy of utmost frankness, would it not, to the public? MR. MAYO: Mr. Chairman, I think there are a good number of rather distinguished precedents in the country by which organizations that have been promoting the same general purposes and goals of other organizations have continued without a name which indicated originally affiliation of some kind. I think that both ways are perfectly honorable and above board, and I really have no apology for the name of the commission as it now stands.

SENATOR MURRAY: Doctor, all these men whose names have been mentioned by the Senator examining you are men of high standing and reputation in the United States, are they not? MR. MAYO: The highest, sir.

SENATOR MURRAY: I noticed that in your statement here you say that the original commisison was brought together for the purpose of considering the critical and emergency problems of children during wartime? MR. MAYO: Yes, sir.

SENATOR MURRAY: Was there any other, and sinister, motive in bringing those people together at that time? MR. MAYO: There was no motive, sir, other than the one you have stated: To get an objective view from persons throughout the country who had some knowledge of the situation of what this nation was doing by way of furnishing adequate protection for its children during wartime. That was its stated, open purpose.

SENATOR MURRAY: That organization was not built up for the purpose of perpetuating any officials in their term of office in the Children's Bureau, was it? MR. MAYO: Not at all; and I would say there is no one on the commission that has the least interest in such a matter.

Statement of Dr. Helmholz, Chief of Section of Pediatrics, Mayo Clinic, Rochester, Minn.

SENATOR MURRAY: I wish you would tell me whether your work at the Mayo Clinic should be classified as the practice of medicine. DR. HELMHOLZ: I do not see how else you could classify it.

SENATOR MURRAY: What is your work there? DR. HELMHOLZ: My work consists in seeing patients, some of them at their home, most of them at the clinic, as I would see patients in private practice anywhere.

SENATOR MURRAY: Are you paid on a fee system or on a salary basis? DR. HELMHOLZ: I have been on a salary ever since I entered the Mayo clinic in 1921.

SENATOR MURRAY: Does the fact that you are on a salary instead of on a fee system have any effect of bringing about a deterioration in your services or your ability to render services? DR. HELMHOLZ: Only as twenty-five years may have decreased my efficiency. I might say that our department has grown from an original registration of about 1,800 to about 7,500.

(Dr. Helmholz described the work of the Mayo clinic.)

SENATOR MURRAY: Doctor, you have given a great deal of study to the care of children, have you? DR. HELMHOLZ: Yes.

SENATOR MURRAY: From your experience in the Middle West, do you think that children get all the medical care they need? DR. HELMHOLZ: No.

SENATOR MURRAY: In what way is the care defective or deficient? DR. HELMHOLZ: I think probably as important as anything is the distribution of the pediatricians. There the pediatrician is in a dilemma, because he says that only the pediatrician can give good care to the child, and yet he as a group has taken care of only about 10 to 20 per cent of the children of the country, and the other 80 to 90 per cent are taken care of by the general practitioners. This distribution in rural communities, communities of 10,000 and less, contains 4 per cent of the pediatricians. In cities of 10,000 and over, 96 per cent of the pediatricians are practicing.

SENATOR MURRAY: Are there other diagnostic clinics, like the Mayo Clinic, where children are seen by a pediatrician? DR. HELMHOLZ: Yes; university clinics are possibly the best example of places where good pediatric care is given. That is a point I think we should stress: That a university clinic is a clinic in which the best possible things are done and the attempt is made to do things better; another way of saying that research is one of the fundamental necessities for good medical care. You will find wherever research is being done, there good medical care is being given.

SENATOR MURRAY: Are there enough diagnostic clinics to meet the need for this kind of care for children? DR. HELMHOLZ: I think that was well covered before a Senatorial committee that made its report, I think, in 1944: That probably the entire country should be subdivided into units, the center of which would be a diagnostic clinic, in which all the very complete medical services can be given. In extending to the periphery, where you finally meet the general practitioner, who has available a health center of some kind, there is a gradual increase in the availability of procedures that are helpful in diagnosis. In other words, the entire country should have available a diagnostic clinic, wherever necessary. And I might say that according to Dr. Bachmeier, the director of the Hospital Survey, probably from 75 to 80 per cent of medical care can be given at the level of the general practitioner. In other words, it is 25 per cent that need greater diagnostic facilities than are available to the general practitioner who is practicing in a small health unit.

SENATOR MURRAY: Do you believe that we should have some kind of a national system whereby medical care could be brought within the reach of people at the present time denied proper care because of financial conditions? DR. HELMHOLZ: I think so definitely. As to how that shall be done, I will admit that in my study of it I have not been able to arrive at anything. It looks as though it could be done in a number of ways, but to me it always comes back to the fact that some agency other than the individual will have to step in and help if we are going to take care of all children and all mothers, and that is what we are trying to do.

In that connection I think this might be interesting, because the Senator mentioned the study that is being made at the present time by the Academy of Pediatrics: I might say that I was chairman of the committee of nine representing the Academy of Pediatrics, the American Pediatric Society and the agency of the Children's Bureau. I might say that that survey is at present being conducted and a study made of personnel, physicians, health officers and technicians in all the counties of all the states in the country, as well as of all facilities, hospitals, health centers and health departments in these same areas.

(Senator Donnell asked questions comparing European and American medicine and Dr. Helmholz described the growth of pediatrics in the United States.)

SENATOR DONNELL: And that level has risen in our own country more rapidly, has it not, than, generally speaking, in the other countries of the world? DR. HELMHOLZ: Exactly. The advantage of the German system, which was leading the world before World War I, was not dependent on the good service that the average man was getting. I had an opportunity in Hardman's clinic to see what I would have considered a fourth year medical student at Hopkins, who stood there and did not know a thing. The education they got was inferior even at that time to what we were getting at Johns Hopkins. But their system of assistanceships in the clinics developed a superior group of men who were outstanding, who did the research of the time, who were leaders in the profession. There were a dozen men in Germany that were way above any one that we had in this country as to their contributions to medicine. But it was not the level of their general practice, even at that time.

SENATOR DONNELL: Doctor, getting back to our own country, there has been a very great advance in medicine in our own country, has there not? DR. HELMHOLZ: Yes.

SENATOR DONNELL: And today the medical profession in our country certainly compares favorably with the medical profession in any country in the world, does it not? DR. HELMHOLZ: Yes.

SENATOR DONNELL: And by "favorably" you mean, do you not, Doctor, that our medical profession in this country excels, generally speaking, the medical professions of the other nations in the world? DR. HELMHOLZ: As far as I know, they are giving better service.

SENATOR DONNELL: I am correct in my statement, am I not, that the medical profession in the United States does excel over the medical professions in other countries of the world? Is that correct? DR. HELMHOLZ: Yes. I would like to put it this way, though: That that is no reason for not continuing to do even better work. That is why I introduced that element of the Minnesota maternal mortality statistics.

SENATOR DONNELL: I think we can all agree that in the professions of law, medicine and any other we should strive for greater achievement than we have had in the past. The point I make is that the medical profession has, by the policy of personal initiative and enterprise and desire to excel in this country, shown the ability to make itself superior to the medical professions of other countries of the world. That is true, is it not, Doctor? DR. HELMHOLZ: Yes.

(To be continued)

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

CALIFORNIA

Personal.—Dr. Philip K. Gilman, San Anselmo, has been named to direct a statewide survey of California hospitals which was authorized by the recent legislature at the request of the governor.

Wallet Size Birth Registration Card.—Persons born in San Francisco may now obtain a new certification of birth registration card, 2½ by 3½ inches in size, from the department of public health, 101 Grove Street, San Francisco. The new card, available June 15, gives information concerning the name, date of birth, sex and race as shown on the original birth certificate and the date on which the certificate was filed. Medical details and personal information regarding parents are not transcribed from the original certificate. The wallet size certification is made on green safety paper and may be used for identification, proof of citizenship and establishment of age. It is issued as an alternative to the complete copy of the birth certificate. The usual legal fee of one dollar is required for either the card or a detailed copy of the birth certificate. Applicants should specify the type of record desired and should furnish the name of the child as it was given on the original certificate, date of birth, name of father and maiden name of mother.

CONNECTICUT

Survey of Medical Service.—The committee on rural medical service of the Connecticut State Medical Society has undertaken a study of the availability and adequacy of medical service for residents of rural areas in the state. Questionnaires sent to over three hundred physicians engaged in predominantly rural practice will provide data on need for general practitioners and specialists, ambulance service, hospital beds, extension of public health services and school health services. Participation of the rural population in Blue Cross and interest in a voluntary prepaid medical service plan will also be determined. The committee members are Dr. Norman H. Gardner, East Hampton, chairman; Dr. David H. Bates, Putnam; Dr. Gert S. Gudernatsch, Sharon, and Dr. William H. Upson, Suffield.

GEORGIA

Public Health Meeting.—Dr. Millard E. Winchester, Brunswick, health commissioner of Glynn, McIntosh and Camden counties, was named president-elect of the Georgia Public Health Association at its meeting in Atlanta in April. Dr. Abram J. Davis, Augusta, health commissioner of Richmond County, was inducted into the presidency and Mr. Louva G. Lenert, associate engineer, division of public engineering, Georgia Department of Public Health, was reelected secretary.

LOUISIANA

Personal.—Dr. Hiram W. Kostmayer, professor of clinical gynecology, Tulane University of Louisiana School of Medicine, New Orleans, has been elected to honorary membership in the Tulane History of Medicine Society.——Dr. Julius M. Fernandez, Lafayette, has been appointed superintendent of the Charity Hospital in Lafayette, succeeding Dr. Paul H. Kurzweg Jr., Lafayette, who has resigned to enter private practice.

MAINE

Aid for the Physically Handicapped Children.—The Maine Department of Education announces a group of summer courses designed to aid teachers in the education of children with physical handicaps. The courses will be conducted between the summer sessions of Gorham State Teachers College and the University of Maine. The general courses will deal with learning and teaching problems connected with the education of children who are handicapped by infantile paralysis, cerebral palsy, epilepsy, rheumatic fever, heart diseases, tuberculosis or diseases of the eyes or ears, and special courses will include psychology and rehabilitation of the hard of hearing adult, theory and technics of teaching lip reading, practice course in teaching lipreading, speech pathology, clinical methods in speech correction and education of physically handicapped children.

MARYLAND

Medical Director Named for Seton Institute.—Dr. Cuthbert H. Rogerson, formerly medical superintendent of Cassel Hospital, Swaylands, England, has been elected medical director of the Seton Institute, which was formerly known as the Mount Hope Retreat, Baltimore. The name of the institute was changed in a reorganization (The JOURNAL, Dec. 15, 1945, p. 1112). The rehabilitation of certain sections of the hospital has been completed, and patients are now being admitted under the new organization. There are several vacancies on the staff, especially for junior psychiatrists and for interns who are seeking opportunities for training in psychiatry. The institute cares for acute and recoverable cases.

Fellowship for Study of the Rh Factor.—A fellowship has been established in the departments of medicine and obstetrics of the University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, for study of problems relating to the Rh factor. This fellowship will carry a stipend of $2,500 a year and will begin approximately September 1. The fellowship is sponsored by the obstetric and gynecologic section of the Baltimore City Medical Society. Work is to be done in a special laboratory established for this purpose at the University of Maryland School of Medicine. Interested applicants should communicate with the director of the Baltimore Rh Typing Laboratory, Dr. Milton S. Sacks, University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore 1.

MASSACHUSETTS

New Director of Mental Deficiency.—Dr. John T. Shea, Foxboro, secretary-treasurer of the Massachusetts Psychiatric Society, has been appointed director of mental deficiency and statistics in the Massachusetts State Department of Mental Health. Dr. Shea graduated at Queens University, Faculty of Medicine, Kingston, Ont., in 1929. He began his work in the state institutions in Belchertown as assistant physician and senior physician. He was transferred to the Foxboro State Hospital and became its assistant superintendent in 1942.

MICHIGAN

John Dorsey Heads Department of Psychiatry.—Dr. John M. Dorsey, director of the child guidance division of the Children's Fund of Michigan, has been appointed special professor and chairman of the department of psychiatry of Wayne University College of Medicine, Detroit, effective July 1. He succeeds Dr. Heinrich A. Reye, professor of neuropsychiatry, who is retiring after thirty years' service on the staff of the college of medicine, serving as chairman of the department for the past twenty-four years. Dr. Reye has been designated professor emeritus. Dr. Dorsey, who graduated at the State University of Iowa College of Medicine, Iowa City, in 1925, has been associated with the Children's Fund since 1938.

Medical Veterans Organize.—The Medical Veterans of World War II has been organized in Wayne County with Dr. Grover C. Penberthy as president, Dr. William Bromme vice president, Dr. Nathan Brooks secretary and Dr. James E. Lofstrom treasurer, all of Detroit. Membership is composed of members of the Wayne County Medical Society and of members in good standing of adjacent county medical societies who are veterans of the medical departments of the recent war. The objectives of the group are to assist medical veterans, further comradeship and perpetuate the ideals for which the medical veteran served his country. There is at present an active membership of 650, with a potential membership of 1,100 when further demobilization of medical officers is carried out. Twenty-five per cent of the delegate group from Wayne County to the state medical society house of delegates comes from this group.

NEW YORK

Harold Himwich Joins Chemical Warfare Service.—Dr. Harold E. Himwich has resigned as professor of physiology and pharmacology at Albany Medical College, Union University, to become research physician, chief of clinical research branch, Chemical Warfare Service, at the Edgewood Arsenal, Md., effective July 1.

Personal.—Dr. Maurice L. Tainter, director of the Sterling-Winthrop Research Institute, Rensselaer, was elected a vice president of the Sterling Drug, Inc., May 23.——Dr. Arthur S. Broga, Oneida, has been appointed coroner of Madison County, succeeding Dr. Lee S. Preston, Oneida, who resigned. ——Dr. David E. Bigwood Jr., assistant district health officer for the state department of health, with headquarters in Hornell, has been appointed health officer of Utica.

New York City

Memorial Meeting for Simon Flexner.—A meeting was held at the Rockefeller Institute for Medical Research, June 12, in memory of Dr. Simon Flexner, who died May 2. The speakers were John D. Rockefeller Jr., Learned Hand, LL.D., Raymond B. Fosdick, LL.D., Dr. Peyton Rous and Dr. Herbert S. Gasser.

Rockefeller Gift to Proposed Medical Center.—A gift of securities has been received from Mr. John D. Rockefeller Jr. personally for the New York University-Bellevue Medical Center Campaign Fund and with it Mr. Rockefeller's promise of a similar gift after $7,500,000 has been raised from other sources, it was announced June 9. The present value of the securities received is approximately $500,000. It is the understanding that the half-way mark must be reached not later than Dec. 31, 1947 to meet the conditions of the second gift. The campaign goal is $15,000,000.

Report on Contraceptive Services.—A report has been issued by the committee on public relations of the New York Academy of Medicine covering integrated studies on various aspects of contraceptive services. In 1931 the committee reported the existence in Greater New York City of nine hospital contraceptive services in addition to several unlicensed extramural clinics and recommended the establishment of more services for contraceptive advice in connection with hospitals so that there would be no need for unattached extramural clinics, that experienced gynecologists be placed in charge of these clinics and that medical centers as well as hospital clinics instruct physicians and students in modern contraceptive methods and in the indications for their use. In 1945 a resurvey was made with emphasis on contraceptive services, with attention, in addition, given to the sterility clinics, because the two types of services are often integrated and because the Planned Parenthood organizations are beginning to emphasize this part of their program. Of the eighty-nine general hospitals in Greater New York, excluding Catholic hospitals, to which a questionnaire was sent, replies were received from seventy-one. A follow-up letter was sent to the administrative head of institutions from which there was no answer to the first letter and this resulted in nine additional replies. From the total of eighty replies it was ascertained that there were only five hospitals in Greater New York which had special contraceptive clinics and that ten voluntary hospitals offered contraceptive services in connection with their gynecologic departments. No contraceptive advice was being given in the other hospitals. All the clinics were visited. The medical part of the study was carried out by Dr. Harry Aranow with the guidance and advice of a special subcommittee. The recent report discusses the results of a survey of the five clinics and the type of services in each. A total of 1,119 patients attended the five contraceptive hospital clinics during 1944; 253 were new patients and 866 old patients. At the Margaret Sanger Bureau, located in a business district, there were more than 30,000 patients during the same year, it was stated. The report points out that the number of patients seeking contraceptive advice in hospital clinics is comparatively small in New York because it is generally believed that this procedure is illegal and therefore that such advice would not be available. New York law specifically permits physicians to give contraceptive information to cure or prevent disease. The report presents statistical analyses of the contraceptive clinics, planned parenthood centers, Margaret Sanger Research Bureau, the birth control clinics of the National Workers Order and the Judson Health Center and the sterility clinic in fifteen hospitals of Greater New York. In all, these units suggest about twenty-eight organized places where a woman may apply for contraceptive advice instruction and the necessary supplies. The report recommends among other things that child spacing should be recognized as a medical indication and that contraceptive advice should be given by well trained physicians both in their offices and in hospital clinics only when on the basis of a thorough medical study they are professionally and morally satisfied that such action is justified. As family advice is a health service, private physicians and hospitals, as well as the proper health authorities, should assume the responsibility of providing it. When contraceptive services have become a recognized part of hospital service in New York, the Planned Parenthood centers should confine themselves to the education of the public and all education should be under medical supervision, the report states. Until such time as the hospital clinics take over contraceptive clinic service, the Planned Parenthood organizations should continue to maintain contraceptive centers which conform to standards set up for licensure of dispensaries by the state board of social welfare, and the New York Academy of Medicine should strongly urge on the board that these centers be licensed, because they are an important part of preventive medicine and because they cannot be otherwise controlled. Other recommendations offer standards for financing, staffing and treatment.

OHIO

New Institute of Nutrition.—Thomas S. Sutton, Ph.D., of the department of animal husbandry at Ohio State University has been appointed director of the newly established Institute of Nutrition and Food Technology to be operated by the university and the Ohio Agricultural Experiment station at Wooster. The creation of the institute was authorized to coordinate research and studies in the fields of nutrition and food advances.

PENNSYLVANIA

Physician Honored.—On May 11 a portrait of Dr. Harold L. Foss, Danville, Pa., was presented to the George F. Geisinger Memorial Hospital, Danville, by the Association of Resident and Ex-Resident Physicians of the Geisinger Hospital. Dr. Foss has been surgeon in chief of the George F. Geisinger Memorial Hospital since it was opened in 1915. The presentation was made by Dr. Patrick J. Kennedy, Wynnewood, president of the association, and accepted in behalf of the hospital by Mr. Frederick J. Platt, Scranton, chairman of the advisory board. Dr. William L. Estes Jr., Bethlehem, president of the Medical Society of the State of Pennsylvania, was the guest speaker for the occasion. The portrait was painted by John Johansen of New York.

Schireson Case Still in Court.—On June 10 no opinion had yet been handed down in the case of Henry Junius Schireson and the Pennsylvania State Board of Medical Education and Licensure, recently argued before the Supreme Court of Pennsylvania in Harrisburg. A delay in bringing about the revocation of Schireson's license to practice medicine in Pennsylvania occurred in 1945 when an injunction was obtained restraining the state board from action. This injunction was dissolved Nov. 2, 1945 by Judge Karl E. Richards in the court of common pleas of Dauphin County. Through this action the court upheld the contention of attorneys for the board that a state licensing body had "the inherent right to revoke a license obtained by fraud" (THE JOURNAL, Nov. 24, 1945, p. 895). The court also refused to accept Schireson's contention that the board was guilty of laches in attempting to revoke a license which had been issued some thirty years earlier. In a subsequent hearing the Dauphin County Court overruled and dismissed the exceptions filed by the plaintiff.

Philadelphia

Faculty Changes at Woman's Medical College.—The title professor emeritus has been granted to Drs. John S. Rodman, Julia F. S. Fetterman and Margaret C. Sturgis. Dr. Lewis K. Ferguson, who at one period during the war served as chief of surgery on the U. S. S. *Solace* and who recently has been clinical professor of surgery at the University of Pennsylvania Graduate School of Medicine, has been appointed professor of surgery, succeeding Dr. Rodman. Dr. Stanford W. Mulholland, associate professor of urology at the college since 1939, has been appointed professor of urology to succeed Dr. Fetterman. An official release indicated that Dr. Mulholland will also fill Dr. Fetterman's position as medical director on the faculty. Dr. Mary D. Pettit, instructor in gynecology and obstetrics, Albany Medical College, Albany, N. Y., has been appointed professor of gynecology, succeeding Dr. Sturgis. Marion S. Fay, Ph.D., is acting dean at Woman's Medical College, having served in that capacity in the absence in military service of Dr. Margaret D. Craighill, dean, who has now resigned.

TENNESSEE

Twenty-Five Year Postgraduate Program.—At the 1946 session of the Tennessee State Medical Association in Knoxville recently the committee on postgraduate medical education and the board of trustees approved a twenty-five year financial plan leading to permanent establishment of postgraduate study in Tennessee. The committee is now calling on medical societies throughout the state to make a complete member canvass for contributions from physicians to the program. The plan calls for $1,000 contributions from one hundred doctors as an initial effort. Receipts will be issued for all contributions because they are deductible from income tax returns. Other plans and sources of revenue for the creation of this fund will be described in a small booklet which will shortly be printed and placed in the hands of the entire profession. All will be given an opportunity to make some contribution. Dr. W. C. Colbert, Memphis, was elected as the next chairman for the

postgraduate committee for the program "Neuropsychiatry for the Years 1947-1948." The Commonwealth Fund of New York sponsored a pilot course in psychiatry at the University of Minnesota, which, it is hoped, can be duplicated in Tennessee. In the medical state journal credit is given to the Commonwealth Fund for its many years of support to postgraduate education, consisting of more than $100,000 in Tennessee and for its offer to continue assistance with a reduced amount for the next program in neuropsychiatry until the profession can set up its own funds.

Committee Named on Unauthorized Practice.—A committee on unauthorized practice of the healing art has been created through legislative resolution. Members of the committee are Dr. Robert H. Hutcheson, Nashville, state commissioner of public health, and four lay persons: Mr. Carmack Cochran, Nashville Trust Building, Nashville; Mr. George Sheats, Baptist Memorial Hospital, Memphis; Professor J. E. Windrow, Peabody Demonstration School, Nashville, and Mr. W. P. Taylor, 514 South Gay Street, Knoxville. The committee will undertake to ascertain whether or not there is "unauthorized practice of the healing art and various branches thereof" in Tennessee. The joint resolution on which the legislative action was based indicated that because of an acute shortage in Tennessee of persons licensed to practice the healing art in its various branches and a similar shortage of hospital facilities, including nurses, technicians and others, brought about by the response of Tennessee to patriotic appeals, unscrupulous persons have unlawfully been holding themselves out as licensed to practice the healing art.

TEXAS

C. A. Selby in New Position.—Dr. Claude A. Selby, until recently director of health of Nebraska, is now medical supply officer with the District Office, U. S. Public Health Service, Dallas. Covering Texas, New Mexico and Oklahoma, Dr. Selby's work will be to survey and evaluate military establishments with respect to their conversion to civilian use by state, city and government agencies.

Three Year Fellowship Awarded to James Baxter.—The Welch Fellowship in Internal Medicine has been given to Dr. James H. Baxter Jr., assistant professor of medicine, Southwestern Medical College, Dallas, beginning July 1. The fellowship is administered by the medical fellowship board of the National Research Council, Washington, D. C., and is open to a limited number of United States physicians under 40 years of age who have demonstrated unusual aptitude and promise of outstanding achievement in internal medicine, teaching and investigation. The fellowship provides funds for a prolonged period of advanced training, study and investigation in the medical sciences as well as clinical experience, teaching and research in internal medicine. Dr. Baxter's first year's program will be in the laboratory of Vincent du Vigneaud, Ph.D., at Cornell University Medical College. Subsequent years of the fellowship will be reviewed annually by the board of the National Research Council.

UTAH

Radiologists Organize.—At a recent meeting held in Salt Lake City the radiologists of the state of Utah effected an organization known as the Utah State Radiological Society. The officers include Dr. James P. Kerby president and Dr. Moore L. Allen secretary, both of Salt Lake City. The society plans to hold meetings during alternate months from September to May inclusive.

VIRGINIA

Changes in Health Personnel.—Dr. Vernon A. Turner, formerly health officer of Augusta County and recently released from army service, has been appointed assistant director of local health services, with headquarters in the Southwest district office in Abingdon, effective May 1, succeeding Dr. Peyton M. Chichester, Richmond, who has been transferred to the central office in Richmond. Dr. Cameron F. McRae Jr., recently released from army service, has been named health officer of Russell-Wise Health District to succeed Dr. Linwood Farley, Morton, who was transferred to the Prince William-Stafford Health District with headquarters at Manassas, effective May 1. Dr. William Y. Garrett, Eastville, has been named health officer of Norfolk-Princess Anne Health District, succeeding Dr. John M. Jackson, Manassas. Dr. Thomas Scarlett, Harrisonburg, formerly health officer of Augusta-Rockingham-Harrisonburg Health District, recently returned from medical service in the army, has been assigned as health officer of the Fairfax County Health Department, effective May 1. Dr. Willard W. Griggs, Morton, has resigned as health officer of the Page-Warren-Shenandoah Health District, effective May 13.

WISCONSIN

Octogenarians Honored.—The Wisconsin chapter of the International College of Surgeons held a dinner in Milwaukee on May 15 for four surgeons who are over 80 years of age. The physicians honored were Drs. William E. Ground, Superior, John M. Dodd, Ashland, George V. I. Brown, Milwaukee, and Thomas W. Nuzum, Janesville.

New Professor of Psychiatry at Marquette.—Dr. Michael Kasak, who since 1931 has been associate clinical professor and in charge of psychiatry in the senior class at Marquette University School of Medicine, Milwaukee, and who in 1944 became acting director of the division of psychiatry recently was promoted to be professor and director of the division of psychiatry.

GENERAL

Interns and Residents Requested to Communicate With Their Hospitals.—The Sacred Heart Hospital, Allentown, Pa., has been attempting to effect a reunion of all ex-interns. Many of the letters sent out were returned unclaimed. Dr. Dominic A. Donio, secretary-treasurer of the ex-interns committee of the hospital, recommends that all write to their respective hospitals in order that the hospital records may be brought up to date.

Jayne Shover Named to Direct Cerebral Palsy Work.—Miss Jayne Shover, Chicago, acting director of field services for the National Society for Crippled Children and Adults, has been appointed director of the new cerebral palsy division of the national society (THE JOURNAL, June 1 p. 473). Before joining the National Society for Crippled Children and Adults in 1945 Miss Shover was supervising psychologist and special education director of the Illinois Division of Service for Crippled Children and consultant to the Illinois Commission for Handicapped Children. Headquarters of the new division will be located at the National Society for Crippled Children and Adults, 11 South LaSalle Street, Chicago 3.

Bacteriologists Award Lilly Prize to Dr. McCarty.—At the forty-sixth general meeting of the Society of American Bacteriologists in Detroit, May 24, the Eli Lilly and Company Award was presented to Dr. Maclyn McCarty of the Rockefeller Institute for Medical Research, New York. This was the ninth presentation of the prize, which consists of $1,000 and a medal. It is given annually to a man under 35 for promising work in bacteriology. Dr. McCarty graduated at Johns Hopkins University School of Medicine, Baltimore, in 1937. At the general meeting of the Society of American Bacteriologists he spoke on "Chemical Nature and Biological Specificity of the Substance Inducing Transformation of Pneumococcal Types."

New Medical Director of Research Foundation.—Dr. Christian P. Segard, Leonia, N. J., has been appointed medical director of the Wisconsin Alumni Medical Research Foundation, Madison, Wis., effective June 1. Dr. Segard graduated at the Chicago College of Medicine and Surgery, now Loyola University School of Medicine, in 1913. He once served as adviser to the government of India and the Y. M. C. A. India, and to the government of Bengal, India, as adviser in hygiene and physical education. On returning to the United States after World War I he became director of personnel and assistant director, Third Avenue Railway System, New York. He joined the staff of the eastern office of the Wisconsin Alumni Medical Research Foundation in 1934.

American Congress of Physical Medicine.—The American Congress of Physical Medicine will hold its twenty-fourth annual scientific and clinical session September 4-7 inclusive at the Hotel Pennsylvania in New York. Scientific and clinical sessions will be given each day. All sessions will be open to members of the medical profession in good standing with the American Medical Association. In addition to the scientific sessions the annual instruction courses will be held September 4-6. These courses will be open to physicians and to therapists registered with the American Registry of Physical Therapy Technicians. For information concerning the convention and the instruction course, address the American Congress of Physical Medicine, 30 North Michigan Avenue, Chicago 2.

Parran Named Head of World Health Council.—Dr. Thomas Parran, surgeon general of the U. S. Public Health Service Washington, D. C., was unanimously elected chairman of the International Health Conference in New York, June 20. He had been designated by the U. S. Department of State as chairman of the United States delegation to the conference which opened June 19 and which, according to one announcement, will continue for four or five weeks. Representatives of sixty-seven countries are in attendance, including the fifty-

one members of the United Nations Organization. In a statement to the press Dr. Parran said that formation of a global health organization would be a major step toward "our total objective of peace" and that the goal of the conference was to make medical service available to all persons regardless of their economic status.

Prevalence of Poliomyelitis.—Reports of cases of poliomyelitis for the periods indicated have been received from the division of public health methods, U. S. Public Health Service as follows:

Division and State	June 15, 1946	June 16, 1945	Median, 1941-1945
New England States:			
Maine	0	0	0
New Hampshire	0	0	0
Vermont	0	1	0
Massachusetts	0	0	0
Rhode Island	0	0	0
Connecticut	0	2	0
Middle Atlantic States:			
New York	4	10	3
New Jersey	2	2	1
Pennsylvania	3	2	2
East North Central States:			
Ohio	3	1	0
Indiana	3	3	0
Illinois	6	0	0
Michigan	1	0	1
Wisconsin	0	1	0
West North Central States:			
Minnesota	1	0	0
Iowa	3	0	0
Missouri	0	0	0
North Dakota	0	0	0
South Dakota	0	0	0
Nebraska	1	0	0
Kansas	4	0	1
South Atlantic States:			
Delaware	0	0	0
Maryland	0	0	0
District of Columbia	0	0	0
Virginia	0	3	2
West Virginia	2	2	0
North Carolina	4	2	0
South Carolina	0	7	1
Georgia	6	2	0
Florida	25	0	1
East South Central States:			
Kentucky	6	0	0
Tennessee	0	3	1
Alabama	25	8	1
Mississippi	4	0	0
West South Central States:			
Arkansas	2	1	2
Louisiana	3	1	2
Oklahoma	10	0	0
Texas	39	37	4
Mountain States:			
Montana	0	0	0
Idaho	0	0	0
Wyoming	0	0	0
Colorado	10	0	0
New Mexico	2	0	0
Arizona	0	0	0
Utah	0	2	1
Nevada	0	0	0
Pacific States:			
Washington	2	0	0
Oregon	0	1	0
California	14	5	6
Total	185	96	71
24 weeks	1,381	999	657

Essay Award Goes to Yale Physician.—Dr. Arthur J. Geiger, assistant professor of medicine, Yale University School of Medicine, New Haven, is the winner of the 1946 annual essay contest of the Mississippi Valley Medical Society "for the best unpublished essay on a subject of practical and applicable value to the general practitioner of medicine." Dr. Geiger's subject was "Penicillin Therapy in Subacute Bacterial Endocarditis." Second prize was awarded to Dr. Frederick Steigmann of the University of Illinois, Chicago, for his essay "The Problem of Jaundice in General Practice" and third prize to Dr. Rutherford T. Johnstone, Los Angeles, for his essay "A Basic Approach to the Diagnosis of the Occupational Diseases." Dr. Geiger will receive $100, a gold medal and a certificate of award. He will deliver his essay at the eleventh annual meeting of the Mississippi Valley Medical Society, Jefferson Hotel, St. Louis, September 25-27.

Teaching of Physics for Students of Biology and Medicine.—Following a recommendation from the scientific advisory committee of the Baruch Committee on Physical Medicine to the executive committee of the American Association of Physics Teachers, a committee of three members of the association has been formed to assist in a more effective teaching of physics for premedical students and students of biology. Members of the committee are Lester I. Bockstahler, Ph.D., Evanston, Ill., Louis A. Strait, Ph.D., Austin, Texas, and LeRoy L. Barnes, Ph.D., Ithaca, N. Y., chairman. The committee will assemble and make available to teachers of the first course in college physics illustrative material from biology and medicine which will show physical principles at work in biologic processes and physical principles applied in the study of biologic processes, and a second course in physics for students of biology and premedical students. The committee invites suggestions from biologists, physicists and physicians interested in the project and requests that all communications be sent to Dr. Barnes, Rockefeller Hall, Ithaca, N. Y.

Life Insurance Research Fund Awards Fellowships.—On June 19 the Life Insurance Medical Research Fund awarded nine fellowships, totaling $23,000, for postgraduate research and student training. Award of the fellowships, the first to be made by the fund, coincided with the approval of eleven new grants, totaling $162,000, to ten institutions for research in this field. These grants and awards bring to $621,000 the allocations for research made by the fund since it was formed (THE JOURNAL, June 23, 1945, p. 606). Two types of fellowships are granted by the fund. The senior fellowships are given to graduates who have a doctor's degree in medicine or the related medical sciences. Junior fellowships are awarded to undergraduate students in medical schools who desire to take an extra year for training in scientific research. It is hoped that this program may serve to increase the number of research workers, particularly in view of the accumulated deficiency of such workers which developed during the war. Fellowships are open to residents of the United States and Canada. Senior fellows usually receive $2,500 to $3,500 a year, while junior fellows are given $1,500 to $2,000 a year. It is expected that additional fellowships will be awarded later this year. Of the nine fellowships just awarded, four are for postgraduate research into cardiovascular diseases and five are to medical students for training and research. The postgraduate fellowships to be available in 1946 were made to:

Dr. Louis Horlick, Montreal, Que., provided satisfactory arrangements are made for him to work in the field of cardiovascular physiology.
Dr. Jacob H. Milstone, Yale University School of Medicine, New Haven.
Dr. Roy L. Robertson, Emory University School of Medicine, Atlanta.
Dr. Kenneth F. G. Savard, University of Montreal Faculty of Medicine, Quebec.

Student fellowships were awarded to:

Gus G. Casten, Southwestern Medical College.
George T. Shires, Southwestern Medical College.
Donn L. Smith, University of Colorado School of Medicine, provided course work is satisfactorily restricted.
Lloyd H. Smith, Harvard Medical School, Boston.
William G. Turman, Syracuse University College of Medicine.

Eight of the new grants are for study of the physiology of circulation or circulatory dynamics. The institutions to which the grants were made and the research workers involved, as announced by M. Albert Linton, chairman of the fund, are as follows:

Dr. Tzvee N. Harris for study of rheumatic fever, Children's Hospital, Philadelphia.
Dr. Katharine K. Merritt, for study of congenital heart diseases, Columbia University College of Physicians and Surgeons, New York.
Dr. Clinton H. Thienes for study of the reaction on circulation, University of Southern California School of Medicine, Los Angeles.
Dr. René Wégria, Columbia University College of Physicians and Surgeons, New York.
Dr. Eugene A. Stead Jr., Emory University School of Medicine, Atlanta, Ga.
Dr. William Dock and Dr. Jean R. Oliver, Long Island College of Medicine, Brooklyn.
Dr. Carl F. Schmidt, University of Pennsylvania School of Medicine, Philadelphia.
Dr. Arabian N. Taylor, University of Texas Medical Branch, Galveston.
Dr. George E. Burch, Tulane University of Louisiana School of Medicine, New Orleans.
Dr. Harold D. Green, Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, N. C.
Dr. Cyril N. H. Long and Dr. John A. Brobeck, Yale University School of Medicine, New Haven.

Dr. Francis R. Dieuaide is scientific director of the Life Insurance Medical Research Fund (THE JOURNAL, April 6, p. 959). He is clinical professor of medicine at Columbia University College of Physicians and Surgeons. On July 1 the office of the Life Insurance Medical Research Fund will be established at the New York Academy of Medicine, 2 East 103d Street, New York. The fund is supported by 149 legal reserve life insurance companies in the United States and Canada, the 139 United States contributing companies representing 93 per cent of the life insurance in force for all United States companies.

CORRECTION

Dialyzed Milk.—In a Query and Minor Note with this title (THE JOURNAL, May 25, p. 366) it is stated that a quart of milk contains 5 Gm. of sodium. This should have read 0.5 Gm.

Deaths

Hal Lovelace Foster ✠ Kansas City, Mo.; University of the City of New York Medical Department, 1882; born July 7, 1858; founder, secretary from 1896 to 1898 and vice president in 1920 of the American Academy of Ophthalmology and Otolaryngology; honorary member of the Missouri State Medical Association; charter member and second secretary of the Jackson County Medical Society; charter member of the Kansas City Southwest Clinical Society; charter member and past president of the Kansas City Academy of Medicine; charter member of the Kansas City Society of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; consulting otolaryngologist, St. Margaret's Hospital in Kansas City, Kan.; visiting otolaryngologist to St. Joseph's and Trinity-Lutheran hospitals; first secretary of All Saints' Hospital, now St. Luke's; at a dinner given in April 1945 an oil portrait of him was unveiled as a memento of the fiftieth anniversary of the American Academy of Ophthalmology and Otolaryngology; died May 21, aged 87, of cardiorenal disease.

Alexander Berkeley Moore ✠ Washington, D. C.; University of Virginia Department of Medicine, Charlottesville, 1907; born in Aldie, Va., Nov. 6, 1883; specialist certified by the American Board of Radiology; member of the American Roentgen Ray Society and past president, American Gastro-Enterological Association, Radiological Society of North America, Inc., Alumni Association of the Mayo Foundation and the American College of Radiology; fellow of the American College of Physicians; in December 1910 entered the Mayo Clinic in Rochester, Minn., as an associate in roentgenology and later became head of the section; served as an associate professor of roentgenology at the University of Minnesota Graduate School, Minneapolis-Rochester; formerly professor of roentgenology at the Georgetown University School of Medicine; a captain in the medical corps of the U. S. Army during World War I; radiologist, Central Dispensary and Emergency Hospital; died March 8, aged 62, of pulmonary embolism.

Robert Glenn Allison ✠ Minneapolis; University of Maryland School of Medicine, Baltimore, 1912; born in York, S. C., Nov. 25, 1887; clinical assistant professor of radiology at the University of Minnesota Medical School and the University of Minnesota Graduate School; specialist certified by the American Board of Radiology; member of the American Roentgen Ray Society, Radiological Society of North America, Inc., and the American College of Radiology; served during World War I; formerly on the staffs of the Trudeau (N. Y.) Sanatorium, Municipal Tuberculosis Sanitarium, Chicago, and Harper Hospital, Detroit; on the staffs of the Glen Lake Sanatorium, Oak Terrace, Minn., Abbott Hospital, Asbury Hospital and the Northwestern Hospital, where he died March 20, aged 58, of cerebral hemorrhage.

Frederick Jerome Walter ✠ San Diego; Chicago Homeopathic Medical College, 1897; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1904; born in Bureau County, Ill., Nov. 11, 1874; past president of the Florida Medical Association and the Volusia County Medical Society; served as president of the Daytona (Fla.) and La Mesa (Calif.) school boards; examiner for the Los Angeles induction board during World War II; at one time medical director of Mudlavia Sanitarium in Kramer, Ind.; member of the Florida Railroad Surgeons Association and surgeon for the Florida Railroad; died in the Scripps Memorial Hospital, La Jolla, February 14, aged 71, of heart disease and lobar pneumonia.

George Walter Caldwell, Los Angeles; University of Denver Medical Department, 1891; born in 1866; in 1892 affiliated with the New Amsterdam Eye and Ear Hospital in New York; instructor in ophthalmology and assistant in rhinology and laryngology at the New York Polyclinic, 1893-1894, and ophthalmic and aural surgeon to Convent and School of the Sisters of St. Dominic in Blanvelt, N. Y., 1893-1894; clinical instructor at San Francisco Polyclinic nose and throat department, 1912-1913; on the clinic staff of the Lane Hospital of Stanford University, San Francisco, nose, ear and throat department, 1913-1914; author of several books; died March 11, aged 79, of heart disease.

Raymond Howard Schroeder ✠ Dayton, Ohio; Ohio State University College of Medicine, Columbus, 1938; interned at St. Francis Hospital in Columbus; served a residency at the Ohio Hospital for Epileptics, Gallipolis and the Licking County Tuberculosis Sanatorium in Newark; began active duty as a first lieutenant in the medical corps, Army of the United States, on Sept. 29, 1942; promoted to captain; served for twenty-six months in China as flight surgeon for the 16th fighter squardon; held the air medal with citation and four major battle stars; separated from the service on February 24; died March 30, aged 32.

Jesse Hall Allen ✠ Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1897; assistant professor of proctology at Jefferson Medical College; specialist certified by the American Board of Surgery; member of the American Proctologic Society; on the staffs of the Broad Street and Methodist hospitals; died in the Jefferson Hospital April 16, aged 77, of cerebral vascular disease.

Francis Joseph Lorraine Barthelme ✠ Effingham, Ill.; St. Louis University School of Medicine, 1923; began active duty as a captain in the medical corps, Army of the United States, on Sept. 22, 1942; service terminated in November 1943; died in St. Anthony's Hospital March 8, aged 48.

Louis Berman ✠ New York; Columbia University College of Physicians and Surgeons, New York, 1915; from 1921 to 1928 associate in biologic chemistry at his alma mater; visiting endocrinologist and once visiting neurologist at the Central Neurological Hospital; among his many books were the "Glands Regulating Personality," "Food and Character," the "Personal Equation," "New Creations in Human Beings" and "Behind the Universe of a Doctor's Religion"; died May 16, aged 53, of heart disease.

Robert Emmett Bryan, Elkins, W. Va.; Jefferson Medical College of Philadelphia, 1882; died March 11, aged 85, of senility.

Jesse R. Bryant, Wausau, Wis.; Rush Medical College, Chicago, 1896; also a graduate in pharmacy; served with the state national guard and during World War I; died February 12, aged 78, of cerebral hemorrhage.

James Bell Bullitt ✠ San Jose, Calif.; University of Louisville Medical Department, 1889; an Affiliate Fellow of the American Medical Association; specialist certified by the American Board of Radiology; member of the American Roentgen Ray Society, of which he had been past president, and the American College of Radiology; on the staffs of the Santa Clara County Hospital and the San Jose Hospital; died February 25, aged 82, of aplastic anemia.

C. J. Campbell, Mulberry, Ark. (licensed in Arkansas in 1903); member of the American Medical Association; died February 28, aged 69, of coronary occlusion.

Francis Smith Clark, Louisville, Ky.; University of Louisville Medical Department, 1892; member of the American Medical Association; died February 20, aged 77, of coronary sclerosis.

Sarah A. Cole, Lincoln, Kan.; State University of Iowa College of Homeopathic Medicine, Iowa City, 1889; the Hahnemann Medical College and Hospital, Chicago, 1898; died February 20, aged 90, of fracture of the femur sustained in a fall.

Silas Melvin Compton, South Bend, Ind.; Indiana University School of Medicine, Indianapolis, 1909; died in St. Joseph Hospital March 5, aged 68, of lobar pneumonia.

William Borden Conner ✠ Rochester, N. Y.; University of Pennsylvania Department of Medicine, Philadelphia, 1900; member of the Rochester Academy of Medicine and the Rochester Pathological Society; on the staffs of the Highland, St. Mary's and Genesee hospitals; died in the Strong Memorial Hospital February 24, aged 69, of carcinoma of the urethra.

Albert Lloyd Cooper ✠ Scottsbluff, Neb.; University of Nebraska College of Medicine, Omaha, 1919; president of the Nebraska State Medical Association in 1943; for many years councilor of the Twelfth District Medical Society; past president of the Scotts Bluff County Medical Society; served on the city council; died in a hospital at Kearney February 18, aged 56, of burns received in an airplane crash at Elm Creek.

Fannie Wooten Cowle, Hot Springs National Park, Ark.; University of Nashville (Tenn.) Medical Department, 1899; died February 21, aged 84, of chronic nephritis.

Walter Roland Cox ✠ Memphis, Tenn.; Memphis Hospital Medical College, 1908; died in St. Joseph Hospital February 11, aged 60, of cerebral hemorrhage.

Charles Woodhouse Crompton, Hoquiam, Wash.; New York Homeopathic Medical College and Hospital, New York, 1891; died January 18, aged 76.

William Simon Crowley, Oak Park, Ill.; Northwestern University Medical School, Chicago, 1909; died in February, aged 61.

Cyrus Richardson Currier ✠ Lieutenant Commander, U. S. Navy, retired, Sandwich, Mass.; Tufts College Medical School, Boston, 1911; U. S. Naval Medical School in 1934; entered the U. S. Navy in 1921 and retired Dec. 1, 1942 for incapacity resulting from an incident of service; died April 9, aged 58, of coronary thrombosis.

Thomas Greene Curry, Franklin, Texas; Kentucky School of Medicine, Louisville, 1894; member of the American Medical Association; died January 15, aged 79.

Clinton Day ✠ Hart, Mich.; Ensworth Medical College, St. Joseph, Mo., 1891; served during World War I; died February 26, aged 81, of arteriosclerosis.

Wilborn John Deason, Happy Camp, Calif.; Chicago College of Medicine and Surgery, 1914; died in the Siskiyou County General Hospital, Yreka, February 25, aged 67.

Stephen Roszel Donohoe, Norfolk, Va.; University of Maryland School of Medicine, Baltimore, 1902; member of the American Medical Association; served during World War I; died March 13, aged 65.

Henrietta C. Dorman, San Bernardino, Calif.; Eclectic Medical Institute, Cincinnati, 1891; died in Monrovia January 25, aged 81.

Ruel E. Ebersole ✠ Surgeon, U. S. Public Health Service, retired, Norfolk, Va.; University of Virginia Department of Medicine, Charlottesville, 1900; died in a local hospital February 13, aged 71.

William C. Frey ✠ San Francisco; University of California Medical School, San Francisco, 1917; on the staff of St. Francis Hospital; died February 23, aged 53, of abscess of the pancreas.

Joseph Reuss Frobese, Austin, Texas; University of Texas School of Medicine, Galveston, 1910; member of the American Medical Association; died in a local hospital February 8, aged 61, of gastric hemorrhage.

Frank Johnson Hall, Kansas City, Mo.; Kansas City Medical College, 1900; member of the American Medical Association; past president of the Jackson County Pathological Society; served on the staff of St. Joseph's Hospital; died February 25, aged 70.

Ulysses S. G. Keller, Madison, Wis.; Columbian University Medical Department, Washington, D. C., 1895; formerly connected with the chemistry department of the University of Wisconsin; died in Grand Rapids January 14, aged 78.

George S. Kinzer, Ickesburg, Pa.; College of Physicians and Surgeons, Baltimore, 1892; member of the American Medical Association; in 1942 awarded a plaque for fifty years in the medical profession by the Medical Society of the State of Pennsylvania, of which he had been a member; died February 28, aged 76.

Ulysses Mercur Lauman, Randle, Wash.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1891; served during World War I; major, medical reserve corps, U. S. Army, not on active duty; for many years a member of the state legislature; died February 28, aged 79.

William Malcolm, New York; University of the City of New York Medical Department, New York, 1891; formerly Presbyterian medical missionary in China; died February 19, aged 85.

Edwin Galtney Martin ✠ Benoit, Miss.; Barnes Medical College, St. Louis, 1898; died February 22, aged 75.

Hans Benjamin Museus, Los Angeles; Rush Medical College, Chicago, 1906; died February 16, aged 71.

Willard Fulton Read, Hamilton, N. Y.; University of the City of New York Medical Department, New York, 1897; member of the American Medical Association; from 1895 to 1927 member of the faculty of Colgate University, where he was president pro tem in 1921 and 1922; died in Flushing, N. Y., February 11, aged 81.

Frank P. Robinson, Greeneville, Tenn.; University of Tennessee Medical Department, Nashville, 1890; served during the Spanish-American War; served as first chief surgeon of the National Home for Disabled Volunteer Soldiers, Johnson City; died January 26, aged 84.

Cornelia Anna Stoeltzing ✠ Cleveland; University of Wooster Medical Department, Cleveland, 1906; one of the founders of the Woman's Hospital, where she served as president of the board of trustees; died January 12, aged 63.

Jessie Wilhelmina Smith Trumpour, Forest Glen, Md.; Cleveland Medical College, Homeopathic, 1897; University of Wooster Medical Department, Cleveland, 1902; died February 18, aged 76.

DIED WHILE IN MILITARY SERVICE

Ivan Jay Baumgartner, Marshallville, Ohio; Western Reserve University School of Medicine, Cleveland, 1944; interned at the Mercy Hospital in Toledo; began active duty as a first lieutenant in the medical corps, Army of the United States, on July 14, 1945; died in Shaker Heights, March 23, aged 26.

Harold H. Bergman, Pasadena, Calif.; Loyola University School of Medicine, Chicago, 1939; interned at St. Elizabeth Hospital in Chicago; served a residency at the U. S. Public Health Service Hospital in Fort Worth, Texas; commissioned a first lieutenant in the medical reserve corps of the U. S. Army in February 1940; promoted to captain and major in the medical corps, Army of the United States; died in the Birmingham General Hospital, Van Nuys, Dec. 29, 1945, aged 34, of chronic nephritis.

Albert Edward Corpening, Granite Falls, N. C.; Medical College of Virginia, Richmond, 1940; interned at the Norfolk General Hospital in Norfolk, Va., and the Tampa Municipal Hospital in Tampa, Fla.; began active duty as a first lieutenant in the medical corps, Army of the United States, on Dec. 1, 1941; promoted to captain; served in the South Pacific area; died in Forsyth County March 16, aged 29, of injuries received in an automobile accident while on terminal leave.

Charles Kenneth Elder ✠ Oswego, N. Y.; Syracuse University College of Medicine, 1928; member of the American Society of Anesthetists, Inc.; interned at St. Vincent's Hospital of the Borough of Richmond, West New Brighton, Staten Island; served on the staff of the Oswego Hospital; began active duty as a captain in the medical corps, Army of the United States, in August 1942; promoted to major; died in Minetto, January 17, aged 42.

Carl Bertram Hall, Wilmette, Ill.; Northwestern University Medical School, Chicago, 1937; interned at the Evanston Hospital in Evanston, Ill.; served a residency in obstetrics and gynecology at the Pennsylvania Hospital in Philadelphia; commissioned a lieutenant in the medical corps, Army of the United States, Sept. 9, 1942; promoted to captain; served in China and India; died at Camp Kilmer, N. J., January 4, aged 34, of hepatitis.

Charles Eugene Huber Jr., New York; Columbia University College of Physicians and Surgeons, New York, 1928; member of the American Medical Association; interned at the Lenox Hill Hospital; began active duty as a captain in the medical corps, Army of the United States, on July 8, 1942; promoted to major and lieutenant colonel; on duty for thirty months in the China-Burma-India theater and for a time commanded there the Fourteenth Evacuation Hospital; died while on terminal leave February 14, aged 43, of coronary thrombosis.

William Romulus Jenkins, Franklinton, N. C.; University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1943; interned at the University Hospital in Baltimore; began active duty as a first lieutenant in the medical corps, Army of the United States, in February 1944; died at Fort Bragg April 16, aged 28, of acute cardiac failure.

Samuel Alvin Loseff, Chicago; University of Illinois College of Medicine, Chicago, 1932; member of the American Medical Association; interned at the Elgin State Hospital in Elgin, Ill., and the Michael Reese Hospital; on the staff of the Edgewater Hospital; began active duty as a first lieutenant in the medical corps, Army of the United States, on April 7, 1944; died in the Lawson General Hospital, Atlanta, Ga., Nov. 29, 1945, aged 39, of carcinoma.

James Richard Reeves, Columbus, Ohio; Indiana University School of Medicine, Indianapolis, 1933; member of the American Medical Association; assistant professor of medicine at the Ohio State University College of Medicine; affiliated with the University Hospital; began active duty as a captain in the U. S. Army (National Guard) in October 1940; promoted to major; relieved from active duty on March 4; died in St. Francis Hospital April 11, aged 41, of a skull fracture incurred in a fall while on terminal leave.

Foreign Letters

LONDON

(From Our Regular Correspondent)

May 25, 1946.

Consultants, Specialists and the National Health Service Bill

The bill for a national health service is now passing through the committee stage in the House of Commons. The government is making amendments of a minor nature, but those from the opposition are rejected. As the bill affects consultants as well as general practitioners, meetings of the former have been held to consider it. The Consultants and Specialists Group Committee of the British Medical Association has adopted a number of resolutions. The committee approves the principle of regional organization of hospitals, voluntary and municipal, by regional boards, but it holds that only in agreement with the Central Health Services Council should the minister of health have the right to refrain from laying the council's annual report before Parliament. The medical practitioners on the council, regional boards and hospital management committees should be appointed by the minister after consultation and agreement with the professional organizations concerned. An endeavor should be made before the bill is passed to ensure that medical representation is adequate on the regional hospital boards. Further efforts should be made to obtain a comprehensive health service by including the industrial medical service and the medical services of other government departments. There is no proved necessity for the change of ownership of hospital buildings and equipment or of hospital endowments. The minister should be pressed for an early statement of the retiring age from the service. That part of a hospital which is already built specially or designated as a pay block should be used solely for that purpose. Persons should not be able to avail themselves of the amenities of pay block accommodation without paying for the services of part time consultants attending them. From the medical staff of the hospitals a medical board should be elected by the medical staff with power to nominate an adequate number of their members to the hospital management committee. Every consultant or specialist on the staff of a voluntary or municipal hospital who enters the health service should be entitled to continuity of office on the staff of a hospital in the same area. The right of private practice should be safeguarded and pressure exerted in order that a proportion of accommodation be reserved for private patients. The right to continue as members of the staffs of the hospitals which they serve should be accorded to all consultants and specialists, whether they enter the national health service or not. Where a consultant or specialist can show that he has purchased a bona fide practice, the principle of compensation should be adhered to.

Annual Meeting of the Surgeons of Great Britain and Ireland

The annual meeting of the surgeons of Great Britain and Ireland, held in London, was made noteworthy by the attendance of a number of leading French and Belgian surgeons—Leriche, Bazy, Santy, Lortat-Jacob, Mathey, Berat, de Baiseux, Albert, Dejardin, Morelle, Segound and Mayer. The meeting was held under the presidency of Sir Max Page. At a dinner the president of the Royal College of Surgeons, Sir Alfred Webb-Johnson, in proposing the health of the guests, spoke of the emotion felt at this reunion after long years of trial and the admiration of British surgeons for the fortitude of their colleagues and their faith so difficult to keep burning. What at great risk they had done for our men would never be forgotten. In replying, Professor Leriche related how in the difficult years he read the works of the older English surgeons down to Sir Astley Cooper and was impressed with the unity of surgical thought. The need of surgeons today was to break down isolation—to meet and work in common. Sir Max Page welcomed the return of international surgery. It was essential to encourage interchange of ideas to promote science. The director general of the Army Medical Service, Sir Alexander Hood, testified to the achievements of surgeons in the war. By its effect on the morale of troops, efficient care of the sick and wounded contributed enormously to victory. The presence of specialist surgical teams near the front had an immense influence.

NETHERLANDS

(From Our Regular Correspondent)

AMSTERDAM, May 6, 1946.

Estimation of 17-Ketosteroids

For more than twenty years the pharmacotherapeutic laboratory of the University of Amsterdam was engaged in research on sex and adrenocortical hormones. Contributions toward the refining and characterization of estrogenic agents and the discovery and chemical identification of the male steroid testosterone were among the results achieved. Since the late prewar years the nonbiologic estimation of sex steroids was included in the program. During the last few years E. Dingemanse and L. G. Huis in the *Veld* elaborated a method of estimating 17-ketosteroids in the urine of patients and of normal persons, and the clinical application of this method is yielding valuable results.

Mortality from Tuberculosis in the Netherlands

Although the absolute figures are not very high in comparison with those of other countries, the rise of the mortality from tuberculosis during the war is considerable, as shown in the accompanying table.

Mortality from Tuberculosis

	1928-1939	1937	1938	1939	1940	1941	1942	1943
The Netherlands....	60	48	45	41	44	59	61	70
Amsterdam	56	44	41	35	37	60	71	75

Gift of Penicillin by American Red Cross

The American Red Cross has given a billion units of penicillin to several Dutch hospitals. The penicillin has been sent to the Netherlands by special aircraft.

Cancer Diagnosis

Dr. van der Spek describes in the *Nederlandsch tijdschrift voor geneeskunde* **90**:360, 1946 the serologic method of diagnosing cancer. This method has been elaborated by de Kromme and by de Bruïne Groeneveldt. Control tests have shown that the results were correct in 84 per cent of the cases. The method is based on the demonstration of an antigen and of antibodies in the blood and urine of affected persons.

Miscellaneous

In March the University of Utrecht conferred the honorary degree of doctor of science on the phytopathologist Dr. van Luijken for his research on antibiotics. Investigating soils he isolated and cultivated Penicillium expansum, whose culture medium proved to contain an agent antagonistic to the fungus Pythium de Baranyum. Expansine is with reasonable probability identified as anhydro-3-oxymethyl-4-pyrone-carbonacide and its identity with Raistrick's Patulin is probable.

The University of Groningen awarded an honorary doctorate in science to Prof. J. B. S. Haldane for his many contributions to physiology and biochemistry.

Prof. P. Formijne has been reappointed to the Amsterdam chair of internal medicine, from which he resigned at the end of hostilities in the Netherlands last year.

Winston Churchill is to visit the Netherlands from May 8 to 13. On May 10 Leiden University will confer on him an honorary degree of doctor. On May 11 the golden medallion of the city of Amsterdam will be presented to him.

BRAZIL

(From Our Regular Correspondent)

RIO DE JANEIRO, May 22, 1946.

Intrathoracic Goiter

Dr. Raymundo Britto has reported 1,400 cases of thyroid diseases treated at the Red Cross Hospital of Rio de Janeiro. Seventy-two of the 703 patients treated surgically presented intrathoracic goiter. The biotype of the patient is significant in the etiology of intrathoracic goiter. Of 95 such cases, 59 were of the hypersthenic type, 19 of the sthenic type and 17 of the asthenic type. In only 4 of the 72 patients treated surgically was the goiter completely intrathoracic. Fifteen of the 95 patients with this disease were men and 80 were women. Twenty-six of them were from 31 to 40 years of age. Seventy-seven patients, or 81.1 per cent, had hyperthyroidism. Two cases of adenocarcinoma of the left lobe with hyperthyroidism were reported. In almost all cases there was compression and deviation of the laryngotracheal tube predominantly on the left side, making laryngoscopy necessary. Fluoroscopy, radiography and tomography were especially valuable for diagnosis. In the 4 completely intrathoracic cases the cervical route was used for the operation with satisfactory results. No postoperative complications or fatalities were reported. Sulfonamides and penicillin were administered during the postoperative period.

Penicillin in the Treatment of Frambesia Tropica

Drs. Nery Guimarães, Marques da Cunha and A. Area Leão of the Oswaldo Cruz Institute of Rio de Janeiro have been conducting for several months a series of experiments on the treatment of frambesia tropica (pain, yaws). Dr. Guimarães has now published a fifth paper. The report deals with investigations performed to ascertain (*a*) the minimal curative dose for the initial lesions of frambesia, (*b*) the effect of the reduction of the number of injections in each day and the possible application of penicillin in the control of the disease in rural districts and (*c*) reduction of the duration of the treatment by the use of high dosage.

Clinical recovery was correlated with dosage of penicillin as follows: (1) 150 Oxford units every four hours, seventeen days; (2) 50 units daily, no recovery; (3) 400 units three times daily, fifteen days; (4) 400 units two times daily, twenty days; (5) 1,600 to 3,200 units daily, twenty to thirty days; (6) 33⅓ to 46.7 units per kilogram of body weight every four hours, fifteen days; (7) 61.5 to 166.7 units per kilogram of body weight every four hours, four days; (8) 20,000 units every four hours for five doses, no recovery.

Late Biochemical Variation of Shigella Alkalescens

Dr. Arlindo de Assis, professor of bacteriology at the Fluminense School of Medicine of Niteroi, state of Rio de Janeiro, published a report on the late biochemical variation of Shigella alkalescens types I and II. Six strains of Sh. alkalescens which had been tested on carbohydrates in 1939 were retested in 1946 on the same substrates (sucrose, rhamnose, dulcitol, xylose and salicin). No change occurred in tests with fermentations of sucrose, rhamnose and dulcitol. The alkali-producing Shigellae may be considered a heterogeneous group of bacteria, which may be split into at least four antigenic types with disregard for their fermentative abilities. Since the stability of these antigenic types is definitely greater than that of the usual fermentation tests, it seems desirable to classify Sh. alkalescens cultures on a purely serologic basis in the future.

Medical Meetings

On July 1 to 5 the seventh Brazilian Congress of Orthopedics and Traumatology will be held at Rio de Janeiro. Besides discussions by surgeons who served in the Brazilian Expeditionary Force in Europe, the program includes special reports on the treatment of congenital clubfoot by Dr. Oswaldo Campos, Rio de Janeiro, and Dr. Define Frasca, São Paulo, and on intrinsic fractures of the foot by Dr. Guerra Blessman, Porto Alegre, and Dr. Benjamin Salles, Bahia.

The first Inter-American Congress of Medicine, sponsored by the National Academy of Medicine, will be held at Rio de Janeiro on September 7 to 15. Many physicians and surgeons of the Americas have already accepted the invitation of the organizing committee to be present at the meeting, including Drs. Malcolm MacEachern, Charles O. Bruce Jr., George Pack, Samuel Soskin and Tracy Putnam from the United States. The subjects to be discussed at the meeting are included in ten divisions: hospitals and hospital organization, medical and social aspects of immigration, war medicine and surgery, prevention and treatment of cancer, the great endemic diseases of the Americas, nutriology and vitaminology, endocrinology, tuberculosis, neuropsychiatry, hygiene and public health.

Brief Items

Dr. Mauricio C. Medeiros has been appointed professor of psychiatry at the University of Rio de Janeiro, succeeding Dr. Henrique Roxo, who retired from active duty because of age.

Dr. Luis A. Capriglione has been appointed professor of medicine at the University of Rio de Janeiro, succeeding the late Dr. Heitor Annes Dias.

Marriages

GEORGE J. GABUZDA JR., Freeland, Pa., to Ensign Marion E. Jarvis, Navy Nurse Corps, of St. Albans, Vt., April 2.

FRANKLIN H. SCHAEFER, New Haven, Conn., to Miss Dorothy Marguerite Hunter of Erie, Pa., April 5.

ALFRED WILLIAM HARRIS to Miss Claire Marie Schlenter, both of Dallas, Texas, in New York, April 10.

RALPH V. BYRNE, Los Angeles, to Miss Mary Voyer of Minneapolis in Beverly Hills, Calif., March 21.

FRANKLIN CROTHERS KELTON, St. Davids, Pa., to Miss Fern Naomi Clemson of Tamaqua, April 20.

JACK KELLY HOLMES, Belmont, Mass., to Miss Christine M. Kinsler of Lincoln in Concord, April 13.

AUBREY VAN WYCK GOULD JR., New York, to Miss Marjorie Wessels at West Sayville, N. Y., April 13.

ROBERT EARLE POOLE, Spartanburg, S. C., to Miss Beulah M. Robeson of Columbus, Ga., April 20.

FITZGERALD H. CLARK, Jamestown, N. Y., to Miss Alfreda M. Hilldale of Sugar Grove, April 17.

COLMAN LOPATIN, New Haven, Conn., to Miss Frieda Kenigsberg of Middletown, March 31.

DOUGLAS M. CHESSON, Houma, La., to Miss Willa Dean Comeaux in Broussard recently.

HERBERT TABOR, Bethesda, Md., to Dr. Celia White of Dorchester, Mass., April 8.

WILLIAM H. CROUCH JR. to Miss Jean Carlson, both of Kansas City, Mo., April 7.

WILLIAM GARY CUMBIE to Miss Carolyn Boatner, both of Troy, Ala., April 30.

DAVID M. JONES to Miss Jane Gardner, both of Indianapolis, March 23.

Correspondence

TOXICITY OF THIOGLYCOLIC ACID USED IN COLD PERMANENT WAVE PROCESS

To the Editor:—The article by Dr. Lawrence H. Cotter on Thioglycolic Acid Poisoning in Connection with the "Cold Wave" Process (THE JOURNAL, June 15, p. 592) contains some misstatements and contradictions that should be clarified as a part of any fair appraisal of the situation. Obviously, Dr. Cotter is necessarily unaware of extensive investigative work that has been carried out by manufacturers for evidence of sensitizing properties of cold wave material and also of measures for the appraisal of primary irritation of the skin.

1. Throughout the article there are statements and implications to the effect that thioglycolic acid, as such, is used in cold wave preparations. I do not know that any thioglycolic acid, as such, is ever used, all being neutralized or provided with an excess of alkaline material, either ammonium hydroxide, which may be undesirable, or with other basic material, which practice is preferable.

2. Dr. Cotter refers to "chemically pure" thioglycolic acid. There is no such substance as "pure" thioglycolic acid in that hydrogen sulfide always is an immediate or ready decomposition product. It is possible to stabilize thioglycolic acid to the point that no, or only traces of, hydrogen sulfide are produced, in which instance the stabilizing agent becomes the deviating substance from chemical purity.

3. Throughout the article emphasis is placed on positive cephalin flocculation tests. At one point the statement is made that a positive cephalin flocculation test suggests a chemical poison. Recourse to the publications of the originator of the cephalin flocculation tests, Dr. Franklin Hanger, fails to reveal any claim that this procedure is a test preponderantly for external chemical poisons. Rather it is an index of hepatic inflammation. In the totality of hepatic inflammation external poisons do not play a paramount role.

4. Of the cases cited, it is probable that Dr. Cotter will concur in the belief that at and after the time he saw the first patient all significant manifestations were characteristic of x-ray damage, which x-ray burns with ulcers he emphasizes. For case 2 I find no sound evidence linking the condition described with thioglycolic acid. Some months after any exposure to thioglycolic acid the woman was under observation by Dr. Cotter. In case 3, iteration and reiteration is directed to the burning action of "acid." Appropriate inquiry would have established that no acid was present in the cold wave solution. If any acid was present in the circumstances, this would have been limited to the highly dilute acid that may have been utilized, as is customary, for the removal of the alkaline wave solution.

5. Claim is made that the cases chosen for publication were selected "because it had been possible to demonstrate their lesions in the laboratory." A review of these cases does in truth disclose some laboratory work and some indication of pathologic change, but I doubt that these "lesions" have through any shown proof been associated with thioglycolic acid as a causative factor.

At least one manufacturer to my knowledge has procured elaborate testing (1) to establish the degree of primary irritation of thioglycolic acid at various percentage levels, together with any similar effects of the alkaline derivatives as actually used in cold wave preparations, (2) to determine the possibilities of sensitization through repeated patch tests carried out at such intervals as are appropriate to the causation of sensitization, (3) appraisal of circumstances under which hydrogen sulfide is produced in the original thioglycolic acid and the procurement of stabilizers preventing this occurrence and (4) elaborate animal experiments in which thioglycolic acid and subsequently produced alkaline salts were applied or introduced under divers conditions. Such work I have carried out in Chicago, New York, Ann Arbor and Detroit. The totality of results suggests that:

(*a*) There is no primary skin irritation from thioglycolic acid or alkaline derivatives at levels below 8 per cent.

(*b*) I have not seen evidence of sensitization and allergic responses with properly prepared materials under any circumstances.

(*c*) Hydrogen sulfide formation can be controlled through stabilization.

(*d*) In my tests measurable systemic responses have not occurred in animals after parenteral introduction.

Wholesale condemnation of all cold wave process materials is not, I believe, warranted.

CAREY P. MCCORD, M.D., Detroit.

BLOOD PRESSURE IN HYPERTENSION

To the Editor:—I have just read in the February 9 issue of THE JOURNAL the paper of Gubner, Silverstone and Ungerleider about the range of blood pressure in hypertension. Since I read the first communications about pressure and depressor tests I have proved their ability in my private practice and found them a useful aid in the evaluation of hypertensive and preltypertensive states. But I encountered some difficulty: Most of my patients did not cooperate satisfactorily in performing the pressor test; they did not stop breathing long enough to record the highest systolic pressure and repeating the test for reading the diastolic level was much more difficult. The authors of the paper also experienced this difficulty of maintaining apnea and therefore advised the brief inhalation of aromatic spirit of ammonia. I should like to draw attention to a simple but useful modification I used in the technic of the pressor test: The patient was instructed to make—as in breathing or "humming" exercises—an F or S sound with his mouth while exhaling and to prolong this expiration exercise as long as he could stand it. With this modification in producing apnea I never had difficulty in recording the systolic as well as the diastolic pressure in one single reading. Since I have used this modification of the pressure test I have never had to use inhalation of aromatic spirit of ammonia. This modification is so simple and so satisfacory that it warrants further use.

MAX NUSSBAUM, M.D., Petah-Tikwa, Palestine.

THE RACIAL FACTOR IN DISEASE

To the Editor:—In an otherwise excellent and timely paper on gout (McCraken, J. P.; Owen, P. S., and Pratt, J. H.: Gout: Still a Forgotten Disease) the authors, in discussing race, state that approximately one half of the patients in their series were of American parentage and that the remaining racial groups were Jewish, Italian, Irish, English, German, Negro, Canadian, French, Austrian, Greek and Lithuanian.

It would seem almost supererogatory to point out the exceedingly misleading and falsely inferential nature of this statement. Aside from the fact that several of the categories are not at all mutually exclusive, all of them, with the possible exception of the Negro (and even here, possibly not so) are to a varying extent, including and perhaps especially the American and Jewish, diverse mixtures of widely varying origins. I do not know, and I doubt whether any one could tell with accuracy, the racial origin of a person "of American parentage" of a Jew residing in Boston (with or without American parentage) or of an Englishman. It would appear that there is a need for greater accuracy on the part of those who wish to deal with such data.

ARTHUR M. GINZLER, M.D., Baltimore.

POSTGRADUATE CONTINUATION COURSES FOR VETERAN AND CIVILIAN PHYSICIANS

Compiled by the Council on Medical Education and Hospitals for Period July 1, 1946 to Jan. 15, 1947

Medical schools, hospitals, state medical societies and other medical educational institutions and organizations are providing the Council with a growing body of information on courses designed primarily to meet the needs of returning medical officers. These have been incorporated into the lists on these pages. They are not specifically designated for veterans, since most if not all of them may also be open to interested civilian physicians. Furthermore, all courses listed which were not designed primarily for physician veterans are also open to qualified returning medical officers.

Note that each course is listed only once, without cross indexing, so that in some instances a prospective student should look under more than one heading for a desired course.

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Postgraduate Continuation Courses for Practicing Physicians—July 1, 1946 to Jan. 15, 1947

Institution	Title of Course		Registration Fee and/or Tuition
ALLERGY			
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12	Allergy	1 month, monthly	$200
Tufts Medical School, Postgraduate Division, 30 Bennet St., Boston 11 At: Affiliated Hospitals	Allergy	Nov. 11-15, 5 days full time	40
American College of Physicians, 4200 Pine St., Philadelphia 4 At: Boston, Mass.	Allergy-Cardiology	Nov. 4-9, 1946, 1 week	Members 20 Non-members 40 Service men free
Long Island College of Medicine, Medical Society of County of Kings, 1313 Bedford Ave., Brooklyn 2 At: Kings County Hospital	Allergy	Oct. 11, 1946 8 sessions, once a week	20
American College of Physicians, 4200 Pine St., Philadelphia 4 At: New York City	Allergy-Cardiology	Nov. 4-9, 1946, 1 week	Members 20 Non-members 40 Service men free
Columbia University Faculty of Medicine, 630 W. 168th St., New York 32 At: Roosevelt Hospital	Recent Advances in Allergy	Nov. 11-16, 1946 full time	40
Columbia University Faculty of Medicine, 630 W. 168th St., New York 32 At: New York Post-Graduate Medical School, 303 E. 20th St., New York 3	Allergy	June 26, 1946 3 weeks, full time	200
Columbia University Faculty of Medicine, 630 W. 168th St., New York 32 At: Mount Sinai Hospital	Allergy	Nov. 11-23, 1946 Part time	20
New York Medical College, Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Allergy	2 months arranged	50
American College of Allergists, Inc. At: Jefferson Medical School, Philadelphia	Intensive Fall Instructional Course in Allergy	Nov. 4-9, 1946	100
Graham Thomas Clinic, 210 Franklin St., Richmond, Va.	Fellowship in Allergy	July 1, 1946, 1 year and Jan. 1, 1947	None
Marquette University School of Medicine, Milwaukee, Wis.	Basic Orientation Course in Allergy	Oct. 7-11, 1946, 1 week	40 Interns and residents free
ANATOMY			
Tufts Medical School, Postgraduate Division, 30 Bennet St., Boston 11 At: Affiliated Hospitals	Surgical Anatomy	Oct. 7-Nov. 29, 1946 3 days a week	200
Wayne University College of Medicine, 1516 St. Antoine St., Detroit	Advanced Dissection	July-Sept., 1946	40
	Regional Dissection	July-Sept., 1946	40
	Regional Anatomy	Arranged	40
Creighton University School of Medicine, 306 N. 14th St., Omaha	Anatomy	Arranged	None
New York Medical College, Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Applied Anatomy of Ear, Nose and Throat	Arranged, 110 hrs.	Arranged
	Applied Anatomy of the Upper Extremity	Arranged, 60 hrs.	125
	Applied Anatomy of the Anesthetist	Arranged, 100 hrs.	275
	Applied Anatomy of the Thorax	Arranged, 120 hrs.	275
	Applied Anatomy of the Urogenital System	Arranged, 130 hrs.	300
	Applied Anatomy of the Lower Extremities	Arranged, 60 hrs.	125
	Applied Anatomy for the Orthopedic Surgeon	Arranged, 100 hrs.	275
	Applied Anatomy of the Abdomen	Arranged, 130 hrs.	300

Postgraduate Continuation Courses for Practicing Physicians—July 1, 1946 to Jan. 15, 1947—Continued

Institution	Title of Course		Registration Fee and/or Tuition
	ANATOMY—Continued		
University of North Carolina School of Medicine, Chapel Hill	Anatomy	Arranged	25
Duke University School of Medicine, Durham, N. C.	Anatomy	Arranged, 3 mos. or longer full time	None
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia	Otologic (Cadaver) Operations	Arranged, 2 weeks 20 hrs.	100
At University of Pennsylvania Anatomical Laboratory	Rhinolaryngologic (Cadaver) Operations	Arranged, 10 days 20 hrs.	150
University of Texas Medical Branch, Galveston, Texas	Applied Anatomy	Arranged	Not stated
	ANESTHESIOLOGY		
University of Georgia School of Medicine, University Place, Augusta	General Anesthesia (Inhalation and Intravenous)	Arranged, 2 weeks Throughout year	150
	Regional Anesthesia	Arranged, 2 weeks Throughout year	150
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12	Inhalation Anesthesia	1 month, monthly	200
Tufts Medical School, Postgraduate Division, 30 Bennet St., Boston 11 At: Affiliated Hospitals	Anesthesiology	Dec. 2-5, 1946, 4 days Full time	40
Columbia University Faculty of Medicine, 630 W. 168th St., New York 32 At: Mount Sinai Hospital	Anesthesia Diagnostic and Therapeutic Nerve Blocking	Oct. 22-Nov. 22, 5 weeks Part time	30
Columbia University Faculty of Medicine, 630 W. 168th St., New York 32 At: Post Graduate Medical School, 303 E. 20th St., New York 3	Anesthesia *	Arranged, 2 weeks Full time	100
New York Polyclinic Medical School and Hospital, 341-353 W. 50th St., New York	Regional Anesthesia	Oct. 1, 1946-Jan. 2, 1947 3 months	300
New York University College of Medicine, 477 First Ave., New York 16	Anesthesia	Fall, 6 months	250
Duke University School of Medicine, Durham, N. C.	Anesthesia	Arranged, 3 or 6 weeks Full time	None
Ohio State University College of Medicine, 11th and Neil Avenues, Columbus, Ohio At: Ohio State University Hospital	Anesthesia	Arranged, 3 months	Not stated
	ARTHRITIS		
Long Island College of Medicine, Medical Society of County of Kings, 1313 Bedford Ave., Brooklyn 2 At: Jewish Hospital	Arthritis	Oct. 14, 1946, 8 sessions weekly	20
New York University College of Medicine, 477 First Ave., New York 16 At: Bellevue Hospital	Arthritis and Rheumatic Disorders	Fall 1946, 6 weeks Part tmie	100
	BACTERIOLOGY		
Wayne University College of Medicine, 1516 St. Antoine St., Detroit	New Bactericidal Agents	Arranged, part time	10
University of North Carolina School of Medicine, Chapel Hill, N. C.	Bacteriology and Immunology	Arranged	25
Duke University School of Medicine, Durham, N. C.	Bacteriology and Parasitology	Arranged, 3 months or longer, Full time	None
	BASIC SCIENCES		
University of California University Extension, San Francisco	Training Course in the Basic Sciences	June 24, 1946, 16 weeks	Not stated
University of Minnesota Medical School, Minneapolis At: Center for Continuation Study	Basic Sciences and Their Clinical Application	Sept. 1, 1946-June 1947 10 months	Arranged
	BIOCHEMISTRY		
Creighton University School of Medicine, 306 N. 14th St., Omaha	5 Lectures on Recent Developments in Biochemistry	Arranged	None
University of North Carolina School of Medicine, Chapel Hill	Biochemistry	Arranged	25
Duke University School of Medicine, Durham, N. C.	Biochemistry	Arranged, 3 months, full time	None
	CARDIOVASCULAR DISEASES		
Los Angeles Heart Association At: Los Angeles General Hospital, County Medical Bldg., Los Angeles	Postgraduate Symposium on Cardiovascular Disease	Oct. 23 and 24, 1946 2 days	10
California Heart Association, 45 Second St., San Francisco At: Los Angeles, San Francisco and San Diego	Postgraduate Course in Cardiovascular Disease	Oct. 1946, 1 day 2 days, 3 days	10 & 15
University of Southern California, School of Medicine, 3551 University Ave., Los Angeles	Cardiology and Vascular Disease	Sept. 16, 1946, 9 months Full time	750
At: Los Angeles County Hospital	Cardiology	Sept., 1946, 12 weeks weekly	Regis. fee 15 Regis. fee 50 5
American College of Physicians, 4200 Pine St., Philadelphia 4 At: Denver	Cardiology and Psychosomatic Medicine	Sept. 23-29, 1946, 1 week	Members 20 Non-members 40 Physicians in service free
University of Georgia School of Medicine, University Place, Augusta	Cardiology	Arranged, 2 weeks	150
Harvard Medical School Courses for Graduates, 25 Shattuck St., Boston At: Peter Bent Brigham Hospital	Cardiology	July 1-31, 1946, 1 month	150
Tufts Medical School, Postgraduate Division, 30 Bennet St., Boston 11 At: Pratt Diagnostic Hospital	Cardiology	Nov. 4-8, 1946, 5 days Full time	40
American College of Physicians, 4200 Pine St., Philadelphia 4 At: Ann Arbor, Mich.	Cardiology and Psychosomatic Medicine	Sept. 23-29, 1946, 1 week	Members 20 Non-members 40 Physicians in service free
Creighton University School of Medicine, 306 N. 14th St., Omaha	Cardiovascular Renal Diseases	Arranged	None
Columbia University Faculty of Medicine, 630 W. 168th St., New York 32 At: Mount Sinai Hospital	Cardiovascular Diseases	Oct. 7-Nov. 9, 1946, 5 weeks Part time	75
Columbia University Faculty of Medicine, 630 W. 168th St., New York 32 At: Montefiore Hospital	Cardiology	Sept. 19, 1946-June 26, 1947 40 weeks, part time	250
New York Medical College, Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Cardiology	Nov. 1946, 2 weeks, part time	150

Postgraduate Continuation Courses for Practicing Physicians—July 1, 1946 to Jan. 15, 1947—Continued

Institution	Title of Course	When	Registration Fee and/or Tuition
CARDIOVASCULAR DISEASE—Continued			
New York Polyclinic Medical School and Hospital, 345-353 W. 50th St., New York	Diagnosis and Treatment of Diseases of the Heart	Arranged, 3 weeks, part time	75
New York University College of Medicine, 477 First Ave., New York 16 At: Beth Israel Hospital	Cardiovascular Diseases	Fall, winter, 1946	Civilian Phys. 75 Veterans 50
St. Francis Sanatorium for Cardiac Children, Port Washington Blvd, Roslyn, N. Y.	Seminars on Rheumatic Fever and Rheumatic Heart Disease	Sept. 27-Nov. 29, 1946 2 months, part time	20
	Comprehensive Postgraduate Course in Rheumatic Fever and Rheumatic Heart Disease	July 8-19, 1946, 2 weeks	75
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4	Cardiology	Oct. 1946, 8 Thursdays, 48 hours	80
CHEMISTRY			
Duke University School of Medicine, Durham, N. C.	Practical and Theoretical Instruction in Clinical Chemistry	Arranged, 3 months, full time	None
	Seminars in Clinical Chemistry	Arranged, 10-12 weekly seminars, part time	None
CHEST DISEASES			
California Tuberculosis and Health Association, 45 2nd Street, San Francisco At: Medical Schools in San Francisco and Los Angeles	Tuberculosis	3 days to 2 weeks	None
Creighton University School of Medicine, 306 N. 14th St., Omaha	Diseases of the Chest	Arranged	None
Columbia University Faculty of Medicine, 630 W. 168th St., New York 32 At: Bellevue Hospital Chest Service	Diseases of the Chest	Oct. 7, 1946, ? weeks	50
Columbia University Faculty of Medicine, 630 W. 168th St., New York 32 At: Bellevue Hospital	Tuberculosis and Diseases of the Chest	Oct. 7-19, 1946, 2 weeks, full time	50
Columbia University Faculty of Medicine, 630 W. 168th St., New York 32 At: Montefiore Hospital	Diseases of the Chest	Jan. 3-May 16, 1947 19 weeks, part time	60
Columbia University Faculty of Medicine, 630 W. 168th St., New York 32 At: Mount Sinai Hospital	Diseases of the Chest	Nov. 11-23, 1946, 2 weeks, part time	30
Medical Society of the State of New York, 292 Madison Ave., New York At: Various Hospitals and Sanatoriums and Schools throughout the state	Course of Instruction in Pulmonary Disease and Tuberculosis	Arranged, 3-12 months	Not stated
Trudeau School of Tuberculosis, Saranac Lake, New York	Refresher Course in Tuberculosis	Sept. 9, 1946, 4 weeks	100
University of Oregon School of Medicine, Marquam Hill, Portland	Diseases of the Respiratory Tract	Dec. 2-6, 1946, 5 days, full time	50
DERMATOLOGY AND SYPHILOLOGY			
University of Southern California, School of Medicine, 3551 University Ave., Los Angeles At: Los Angeles County Hospital	Dermatology and Syphilology	Oct. 1946, 11 months, full time	1,000 Regis. fee 15
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12	Dermatology	Sept. 23, Oct. 21, 1946, 2 weeks	100
Harvard Medical School Courses for Graduates, 25 Shattuck St., Boston 15	Dermatology and Syphilology	Arranged, 1 year	500
Tufts Medical School, Postgraduate Division, 30 Bennet St., Boston 11 At: Boston City Hospital	Dermatology	Nov. 18-23, 1946, 1 week, full time	40
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1 At: Social Hygiene Clinic Receiving Hospital	Dermatology	Arranged, 6 hours weekly	40
University of Minnesota Medical School, Minneapolis At: Center for Continuation Study	Pathology of Diseases of the Skin	Fall 1946, 4-6 weeks	To be arranged
Creighton University School of Medicine, 306 N. 14th St., Omaha	Dermatology	Arranged	None
Columbia University Faculty of Medicine, 630 W. 168th St., New York 32	Dermatology	First of any month, 2-6 months	Per month 55
Columbia University Faculty of Medicine, 630 W. 168th St., New York 32 At: New York Post-Graduate Medical School, 303 East 20th Street, New York 3	*Dermatology and Syphilology for Pediatricians	Sept. 16-20, 1946, 5 days, full time	50
	Seminar in Practical Dermatology and Syphilology	Sept. 9-13, 1946, 5 days, full time	45
	Practical Instruction in Dermatological Allergy and Immunology	Arranged, 6 weeks, 3 months, part time	6 weeks 50 3 months 85
	Practical Instruction in Diagnosis and Management of Syphilis	Arranged, 6 weeks, 3 months, part time	6 weeks 50 3 months 85
	*Practical Instruction in Clinical and Microscopic Dermatological Photography	Arranged	1 month 50
	*Practical Instruction in Minor Dermatological Surgery	Arranged, 6 weeks, 3 months, part time	6 weeks 50 3 months 85
	*Practical Instruction in Physical Therapy	Arranged, 6 weeks, 3 months, part time	6 weeks 50 3 months 85
	Dermatology and Syphilology	First of any month, 6 weeks, part time	100 Half fee to phys. in service
New York Polyclinic Medical School and Hospital, 345 W. 50th Street, New York 19	Dermatology and Syphilology	First of any month, 3 months, part time	150 Half fee to phys. in service
New York University College of Medicine, 477 First Ave., New York 16 At: Beth Israel Hospital	Dermatology	Fall, 1946, 4 weeks, 2 days a week	25
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4	Dermatology-Syphilology	Oct. 1946-June 1947, 8 months	Not stated
DIABETES			
Creighton University School of Medicine, 306 N. 14th St., Omaha	Diabetes	Arranged	None
Long Island College of Medicine, Medical Society of County of Kings and Academy of Medicine, 1313 Bedford Ave., Brooklyn 2 At: Jewish Hospital	Diabetes	Oct. 17, 1946, 8 weeks, 1 session weekly	20
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4 At: Philadelphia Hospital	Diabetes Mellitus	Arranged, 2-4 weeks, 75 hours	150

Postgraduate Continuation Courses for Practicing Physicians—July 1, 1946 to Jan. 15, 1947—Continued

Institution	Title of Course		Registration Fee and/or Tuition
ELECTROCARDIOGRAPHY			
University of Southern California, School of Medicine, 3551 University Ave., Los Angeles At: Los Angeles County Hospital	Electrocardiography	Sept. 1946, 12 weeks, once a week, evenings	50 Regis. fee 5
Michael Reese Hospital, 29th Street and Ellis Ave., Chicago 16	Electrocardiography	Aug. 19-31, 1946, 2 weeks	150
Tufts Medical School, Postgraduate Division, 30 Bennet St., Boston 11	Electrocardiography I	Sept. 23-27, 1946, 5 days	40
	Electrocardiography II	Jan. 13-15, 1947, 3 days	25
University of Michigan Medical School, Department of Postgraduate Education, 1313 E. Ann St., Ann Arbor	Electrocardiographic Diagnosis	Nov. 4-9, 1946, 1 week	Not stated
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1 At: Receiving Hospital	Electrocardiography	July-Sept. 1946, 1 hour per week	10
Long Island College of Medicine, Medical Society of County of Kings and Academy of Medicine, 1313 Bedford Ave., Brooklyn 2 At: Beth El Hospital	Electrocardiography and Heart Sound Recording	Oct. 15, 1946, 8 sessions, bi-weekly	20
Long Island College of Medicine, Medical Society of County of Kings and Academy of Medicine, 1313 Bedford Ave., Brooklyn 2 At: Jewish Hospital	Electrocardiography and Clinical Cardiology	Oct. 15, 1946, 15 sessions	20
	Electrocardiography (clinical)	Oct. 14, 1946, 15 sessions	20
Columbia University Faculty of Medicine, 630 W. 168th St., New York 32 At: Mount Sinai Hospital	Intensive course in Clinical Electrocardiography	Dec. 16-21, 1946, 1 week, full time	40
New York Medical College, Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Electrocardiography	First week in Oct. 1946, 15 hours, part time	100
New York Polyclinic Medical School and Hospital, 345 W. 50th Street, New York 19	Electrocardiographic Interpretation	Arranged, 2 weeks, 2 hours daily	75
New York University College of Medicine, 477 First Ave., New York 16 At: Beth Israel Hospital	Electrocardiography	Dec. 1, 1946, 10 weeks, 1 hour per week	35
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia At: Philadelphia Hospital	Electrocardiography and Cardiac Roentgenology	Arranged, 5 days, 30 hrs.	60
University of Texas Medical Branch, 912 Avenue B, Galveston	Electrocardiography	Oct. thru Dec. 1946, once weekly	Not stated
ELECTROENCEPHALOGRAPHY			
University of Illinois College of Medicine, 1853 W. Polk St., Chicago	Electroencephalography	Arranged, 3 weeks	50
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: Mount Sinai Hospital	Laboratory Training in Clinical Electroencephalography	Oct. 24, 1946-Jan. 2, 1947, 2 months, part time	45
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4 At: Graduate Hospital and Pennsylvania Institute	Electroencephalography	1st Thursday of Oct. 1946, 6 Thursdays, 36 hours	150
University of Texas Medical Branch, 912 Avenue B, Galveston	Electroencephalography	Arranged	Not stated
ENDOCRINOLOGY			
University of Southern California School of Medicine, 3551 University Ave., Los Angeles At: Los Angeles County Hospital	Graduate Endocrinology Lectures	July, 1946 and Jan. 1947 12 weeks, once a week, evenings	Tuition 50 Regis. fee 5
Creighton University School of Medicine, 306 N. 14th St., Omaha	Endocrinology	Arranged	None
Long Island College of Medicine, Medical Society of County of Kings, Brooklyn 2 At: Jewish Hospital	Female Sex Endocrinology	Oct. 8, 1946, 10 sessions, once a week	20
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: Mount Sinai Hospital	Diseases of metabolism	Nov. 13-26, 1946, 2 weeks, part time	20
	Endocrinological diseases	Nov. 25-30, 1946, 1 week, part time	20
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Endocrinology	Fall, 1946, one month	150
University of Oregon Medical School, Marquam Hill, Portland	Metabolism and Endocrinology	Nov. 4-8, 1946, 5 days, full time	50
ENDOSCOPY			
Harvard Medical School Courses for Graduates, 25 Shattuck St., Boston	Endoscopy	1 month, arranged monthly	50
Columbia University College of Physicians and Surgeons, 630 W. 168 St., New York At: Columbia Presbyterian Medical Center	Gastroscopy	Oct. to June arranged, 2 months part time	250
	Bronchoscopy	Oct. 21-Nov. 8, 1946, 3 weeks part time	250
At: New York Postgraduate Medical School	Cystoscopy and Endoscopy	Sept. 30-Nov. 1, 1946; Jan. 6-Feb. 7, 1947, 15 sessions, part time	75
At: New York Eye and Ear Infirmary, 218 2nd Ave., New York	Broncho-Esophagology on animals	12 days intensive or 6 weeks, 2 days weekly arranged	250
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4 At: Graduate Hospital & Presbyterian Hospital At: University of Pennsylvania, Surgical and Anatomical Laboratories, Affiliated Hospitals	Cystoscopy, Chromoureteroscopy and Pyelography	6 weeks, 36 hours, arranged	300
	Bronchoesophagology, Gastroscopy and Laryngeal Surgery	2 weeks, 85 hours, arranged	250
FRACTURES			
Long Island College of Medicine and Kings County Medical Society, 1313 Bedford Ave., Brooklyn, N. Y. At: Kings County Hospital	Fractures	Oct. 5, 1946, 10 sessions once weekly	20
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Fractures and Allied Trauma	Fall Term	150
GASTROENTEROLOGY			
American College of Physicians, 4200 Pine St., Philadelphia 4 At: Chicago	Gastroenterology	Nov. 11-16, 1946	Members 20 Non-members 40 Physicians in service free
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1 At: Receiving Hospital	Gastro-enterology Clinic	July-September 1946, 3 months, 1 hour weekly	10
Creighton University School of Medicine, 306 N. 14th St., Omaha	Gastroenterology	Arranged	None
Long Island College of Medicine and Kings County Medical Society, 1313 Bedford Ave., Brooklyn, N. Y. At: Beth El Hospital At: Greenpoint Hospital	Gastroenterology	Nov. 7, 1946, 7 sessions part time	20
	Gastroenterology	Oct. 15, 1946, 12 sessions twice weekly	20
At: Jewish Hospital	Gastroenterology	Oct. 8, 1946, 8 sessions twice weekly	20

Postgraduate Continuation Courses for Practicing Physicians—July 1, 1946 to Jan. 15, 1947—Continued

Institution	Title of Course		Registration Fee and/or Tuition
GASTROENTEROLOGY—Continued			
Columbia University College of Physicians and Surgeons, 630 W 168 St., New York At: Columbia Presbyterian Medical Center	Gastroscopy	Arranged part time	250
At: Montefiore Hospital	Gastroenterology	Oct. 1, 1946, Jan. 14, 1947, 15 weeks part time	75
At: Mount Sinai Hospital	Gastrointestinal Diseases	Oct. 7-Nov. 12, 1946, 5 weeks part time	75
	Surgery of the Gastro-Intestinal Tract	Oct. 21-Nov. 15, 1946, full time	150
At: New York Postgraduate Medical School	Gastroenterology	10 days full time to be announced	75
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Gastroscopy	1 month arranged	100
	Gastroenterology	1 month fall	100
New York Polyclinic Medical School and Hospital, 341 W. 50th St., New York	Gastroenterology	6 weeks, Oct. 1, 1946 to Jan. 2, 1947	50
	Proctology and Gastro-enterology	6 weeks, Oct. 1, 1946 to Jan. 2, 1947	100
New York University College of Medicine, 477 First Ave., New York At: Bellevue Hospital	Clinical Gastroenterology	5 months, part time, fall	100
At: Beth Israel Hospital	Gastroenterology	8 weeks, fall 1946	55
At: Lenox Hill Hospital	Gastroenterology	7 weeks, fall 1946	50
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4 At: Graduate Hospital	Clinical Gastroenterology	16 weeks, 500 hours, arranged	400
American College of Physicians, 4200 Pine St., Philadelphia 4	Gastroenterology	Nov. 11-16, 1946	Members 20 Non-members 40 Physicians in service free
HEMATOLOGY			
Tufts Medical School Postgraduate Division, 30 Bennett St., Boston	Hematology	Nov. 25-29, 1946, full time	40
Creighton University School of Medicine, 306 N. 14th St., Omaha	Hematology	Arranged	None
Long Island College of Medicine and Medical Society of Kings, 1313 Bedford St., Brooklyn At: Jewish Hospital	Clinical Hematology	8 sessions, Oct. 17, 1946	20
Columbia University College of Physicians and Surgeons, 630 W 168 St., New York At: Montefiore Hospital	Clinical Hematology	Sept. 17, 1946 to Jan. 28, 1947	75
	Hematology	Oct. 21-Nov. 16, 1946, 4 weeks, part time	50
New York Medical College Flower and Fifth Ave., Hospitals At: Mount Sinai Hospital	Hematology	2 months arranged	50
New York University College of Medicine, 477 First Ave., New York At: Lenox Hill	Hematology	6 weeks, 2 hours per week, January 1947	25
American College of Physicians, 4200 Pine St., Philadelphia 4 At: Columbus, Ohio	Hematology	5 days, Oct. 21-26, 1946	Members 20 Non-members 40 Physicians in service free
INDUSTRIAL HEALTH			
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1	Orientation Course in Occupational Health and Medicine	Sept. 9, 1946, 15 weeks	Not stated
LEGAL MEDICINE			
New York University College of Medicine, 477 First Ave., New York At: Bellevue Hospital	Courses in Forensic Medicine	Oct. 1946 through June 1947	Variable
Duke University School of Medicine, Durham, N. C.	Legal Medicine	Arranged, 3 months or longer, full time	None
MEDICINE, GENERAL			
California Medical Association Post Graduate Committee, 450 Sutter St., San Francisco 8 At: Leading cities of California	Postgraduate Program	Throughout year	None
University of California Medical School Medical Center, San Francisco 22 At: Toland Hall University of California Hospital	Course in Internal Medicine	Sept. 1946, 12 weeks, part time	60
University of Southern California Medical School, Medical Center, San Francisco 22 At: Los Angeles County Hospital	Review of Internal Medicine	Every 3 months	Tuition 180 Regis. fee 5
	Clinical Review of Internal Medicine	Sept. 1946, 12 weeks, full time	Tuition 250 Regis. fee 5
American College of Physicians, 4200 Pine St., Philadelphia 4 At: Washington, D. C.	Internal Medicine	Oct. 28-Nov. 2, 1946, 1 week	Members 20 Non-members 40 Free to physicians in service
Emory University School of Medicine, 50 Armstrong St., Atlanta, Ga. At: Grady Memorial Hospital and Emory University Hospital	General Internal Medicine	Arranged	12 weeks 125 Per week for less than quarter 12
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12	Internal Medicine	Sept. 23, Oct. 21, 1946, 2 weeks	75
University of Illinois College of Medicine, 1853 W. Polk St., Chicago	General Medicine for Veterans	Arranged, 3 months	Res. of Ill. 75 Non-res. 100
	General Refresher Course	1st of each month, 3 months	Res. of Ill. 75 Non-res. 100
State University of Iowa College of Medicine, University Campus, Iowa City At: State University of Iowa Hospitals	Informal Refresher Course	Arranged, indefinite	None
University of Kansas School of Medicine, Kansas City	Refresher (a) Therapeutics (b) Physical Medicine	Nov. 4-8, 1946 (a) Dec. 9-13, 1946 (b), 5 days	20 No charge to ex- or present military service physicians
Kentucky Medical Association, 620 S. Third St., Louisville At: Louisville General Hospital	Refresher Course in Internal Medicine	Continuously, 6 weeks	None
Maine Medical Association, 142 High St., Portland At: Boston	Medicine and Surgery	Arranged, 1-2 weeks	Arranged
University of Maryland School of Medicine, Lombard and Greene Sts., Baltimore	8 week Review Course	Oct. 10, 1946, 8 weeks	100
Harvard Medical School, 25 Shattuck St., Boston	Review Course for Medical Officers in Medicine and Surgery	Aug. 15, 1946, 6 months	G. I. Bill of Rights
Massachusetts Medical Society and Massachusetts Department of Public Health, 8 The Fenway, Boston At: Boston and local districts	Postgraduate Medical Education	Fall 1946, all year	None

Postgraduate Continuation Courses for Practicing Physicians—July 1, 1946 to Jan. 15, 1947—Continued

Institution	Title of Course		Registration Fee and/or Tuition
MEDICINE, GENERAL—Continued			
Tufts Medical School, Postgraduate Division, 30 Bennet St., Boston At: Affiliated Hospitals	Internal Medicine	Arranged, 1 month	50
	Internal Medicine	Oct. 7-Nov. 2, 1946; Jan. 6-Feb. 1, 1947, 1 month, full time	100
	General Refresher	Oct. 7-Dec. 28, 1946; Jan. 6-March 29, 1947, 3 months, full time	300
	Clinical Medicine	Sept. 3-28, Dec. 2-28, 1946, 1 or 2 months	75
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1 At: Receiving Hospital	Medical Pathological Conference	July-Sept. 1946, 1 quarter	10
	Hematology Clinic, Therapeutic Conference	July-Sept. 1946	10
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1 At: Wayne County General Hospital	Diagnostic Conference	July-Sept. 1946	10
	Seminar in Internal Medicine	July-Sept. 1946, part time	10
Washington University School of Medicine, Kings Highway and Euclid Ave., St. Louis	Courses for General Practitioners	Arranged	G. I. Bill of Rights and arranged
Creighton University School of Medicine, 306 N. 14th St., Omaha	Clinical Basic Science Conference	Arranged	None
	Special Courses	Arranged	None
	Preceptorship	Arranged	None
	General Medicine	Arranged	None
Rutgers University, New Brunswick, N. J. At: Cooper Hospital, Camden, N. J.	Postgraduate Medical "Rutgers Plan"	July 1, 1946, 3 years, 48 weeks per year	Per quarter 24
University of Buffalo School of Medicine, 24 High St., Buffalo	For General Practitioners	Sept. 16-28, 1946, 2 weeks	60
Cornell University Medical College, 1300 York Ave., New York At: Bellevue Hospital	Graduate Course in Internal Medicine	First of each month, 6 months	6 months 250 2 weeks 50
Cornell University Medical College At: Bellevue Hospital	Refresher Course in Internal Medicine	Oct. 1-15, 1946, 2 weeks	Veterans 50
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: Montefiore Hospital	Peripheral Vascular Diseases	Sept. 27, 1946-Feb. 7, 1947, 19 weeks, part time	75
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: Mount Sinai Hospital	Diseases of the Liver	Oct. 7-24, 1946, 3 weeks, part time	30
	Diseases of the Kidneys	Oct. 21-26, 1946, 1 week, part time	10
	Geriatrics	Oct. 1-Nov. 21, 1946, 8 weeks, part time	50
	Peripheral Vascular Diseases	Oct. 22, 1946 to Jan. 21, 1947, 4 months, part time	30
	Symposium on Internal Medicine	Oct. 7-Nov. 30, 1946, 8 weeks, full time	200
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: New York Postgraduate Medical School, 303 E. 20th St., New York 3	Seminar in Internal Medicine	Jan. 2-Feb. 28, 1947, 2 months, full time	2 months 225
	Combined Course in Internal Medicine	Sept. 23-Dec. 13, 1946, 12 weeks, full time	350
Long Island College of Medicine, 1313 Bedford Ave., Brooklyn At: Greenpoint Hospital	*Sterility	Oct. 8, 1946, 12 sessions	50
Long Island College of Medicine, 1313 Bedford Ave., Brooklyn 2 At: Israel Zion Hospital	Pathology of Internal Medicine (Gynecological Pathology)	Oct. 16, 1946, 12 sessions once weekly	60
	Peripheral Vascular Diseases	Oct. 11, 1946, 8 sessions once weekly	20
Long Island College of Medicine, 1313 Bedford Ave., Brooklyn 2 At: Jewish Hospital	Peripheral Vascular Diseases	Oct. 14, 1946, 8 sessions, once weekly	20
	Hypertension and Nephritis	Oct. 16, 1946, 8 sessions, once weekly	20
At: Jewish Sanitarium and Hospital for Chronic Diseases	Internal Medicine and Allied Specialties	Oct. 7, 1946, 2 months, 4 times weekly	50
New York Academy of Medicine, 2 E. 103rd St., New York 29	Tumors	Oct. 7-18, 1946, 2 weeks	Regis. fee 5
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Peripheral Vascular Disease	Fall 1946, 2 weeks	250
	Histogenesis	Arranged, 20 weeks, half time	150
	Peritoneoscopy	Arranged	100
	Diseases of the Respiratory System	Arranged	150
	Internal Medicine	First Monday of every month except July and Aug., 1 month	25
	Physical Diagnosis	Arranged, 1 month	100
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Course for General Practitioners	Arranged, 3 months	200 Half fee to Physicians in service
	Course for General Practitioners	Arranged, 6 weeks	100 Half fee to Physicians in service
New York University College of Medicine, 477 First Ave., New York 16 At: Bellevue Hospital	General Review for General Practitioners	Throughout year from Oct. to June, daily, full time	Civilians 225 Veterans 175
	Internal Medicine	First of each month, Oct. 1946-May 1947, 12 weeks	Civilians 150 Veterans 125
Syracuse University College of Medicine, 766 Irving Ave., Syracuse	Refresher in General Medicine	Arranged	Not stated
University of North Carolina School of Medicine, Chapel Hill	University Postgraduate Course in Clinical Medicine	Fall 1946, 1 day a week for 8 weeks	Not stated
Duke University School of Medicine, Durham, N. C.	Medicine	Arranged, 3 months or longer, full time	None
	General Medicine	Arranged, 1 or 2 weeks or longer, full time	None
American College of Physicians, 4200 Pine St., Philadelphia 4 At: Cincinnati, Ohio	Metabolism and Nutrition	Oct. 14-19, 1946, 1 week	Members 20 Non-members 40 Free to physicians in service
Insterstate Postgraduate Medical Association, Madison, Wis. At: Cleveland, Ohio	Interstate Postgraduate Assembly	Oct. 15-18, 1946	Regis. fee
American College of Physicians, 4200 Pine St., Philadelphia 4 At: Gallinger Municipal Hospital	Postgraduate Course in Internal Medicine	Oct. 28-Nov. 9, 1946, 2 weeks	Members 20 Non-members 40 Physicians in service free
University of Cincinnati College of Medicine, Eden and Bethesda Aves., Cincinnati	Medicine and Pediatrics	Continuously, 3 to 4 months	Not stated
	Refresher Course in Medicine (Pediatrics, Surgery, and Obstetrics)	July 15-Sept. 15, 1946 (tentative), 2 months	Not stated
American College of Physicians, 4200 Pine St., Philadelphia 4 At: Cleveland, Ohio	Internal Medicine	Nov. 18-23, 1946	Members 20 Non-members 40 Free to physicians in service

Postgraduate Continuation Courses for Practicing Physicians—July 1, 1946 to Jan. 15, 1947—Continued

Institution	Title of Course		Registration Fee and/or Tuition
MEDICINE, GENERAL—Continued			
University of Oregon Medical School and Hospital, Marquam Hill, Portland 1	Diagnosis and Treatment of Malignant Growths	Sept. 9-12, 1946, 4 days, full time	Not stated
	General Informal Review	Arranged	Per month 75
At: University of Oregon Medical School Hospital and Clinics	General Refresher Course	July 1 and Sept. 30, 1946, 12 weeks	Per month 75
Mount Sinai Hospital, Philadelphia	Refresher Course	July 1, 1946, 3 months, repeated in 3 months	None
University of Pennsylvania School of Medicine, Thirty Sixth and Pine Sts., Philadelphia	Internal Medicine (Basic Studies)	Oct.-June, annually, 8 months	Not stated
	Refresher Course for Veteran Medical Officers	Sept. 23-Dec. 21, 1946, 12 weeks	175 Plus library deposit 10
	Twelve week Refresher Course	Arranged, 12 weeks	175
American College of Physicians, 4200 Pine St., Philadelphia 4 At: Pittsburgh	Internal Medicine	Sept. 16-21, 1946, 1 week	Members 20 Non-members 40 Free to physicians in service
University of Pittsburgh School of Medicine, Bigelow Blvd., Pittsburgh At: Medical Center	Refresher Course for General Practitioners	Oct. 1, 1946, repeated as required, 5 weeks	100
Medical College of the State of South Carolina, 16 Lucas St., Charleston	Post Graduate Seminar	Nov. 5-7, 1946, 3 days	15
Meharry Medical College, Nashville, Tenn.	Medicine	Arranged, 3 months	per quarter 125
Vanderbilt University School of Medicine, Twenty-First Ave. at Edgehill, Nashville, Tenn.	Medicine	Oct. 1946, 1 to 3 months	3 months 166.66
University of Texas Medical Branch, 912 Avenue B, Galveston	General Internal Medicine	To be announced, 1 week	Not stated
University of Vermont College of Medicine, Pearl St., College Park, Burlington	General Practice; Internal Medicine; Surgery	Beginning of any month, 1 to 9 months	Per year or pro rated 500
	Course for General Practice	Arranged, 12 weeks, part time	Not stated
	Course in Internal Medicine	Arranged, minimum 4 weeks, part time	Not stated
Medical Society of Virginia, 122 E. Clay St., Richmond At: Medical College of Virginia Hospital	Fourth Refresher Course in General Medicine	Sept. 2-14, 1946, 2 weeks	40
Washington State Medical Association, 1215 Fourth Ave., Seattle At: King County Hospital	Internal Medicine	July 15-Aug. 10, 1946, 1 month	None
University of Wisconsin Medical School, 418 North Randall Ave., Madison 6	Refresher Course for General Practitioners	Arranged, 12 weeks	125
	Course for Specialists in Internal Medicine	Arranged, 2 to 6 months	Per month 100
At: Wisconsin General Hospital	Observation Course in Medical and Clinical Subjects	Arranged, 1 to 5 months	Per month 100
American College of Physicians, 4200 Pine St., Philadelphia 4 At: Montreal, Canada	Internal Medicine	Nov. 25-30, 1946, 1 week	Members 20 Non-members 40 Free to physicians in service
NEUROLOGY AND PSYCHIATRY			
University of California Extension Division, San Francisco At: Langley Porter Clinic	Refresher Course in Psychiatry and Neurology	Sept. 16, 1946, 12 weeks	200
Catholic University of America, Washington, D. C. At: St. Elizabeth's Hospital	Psychiatric Conferences	Sept. 1946, 1 semester	10
	Psychosomatic Medicine	Sept. 1946 to Feb. 1947, 1 semester	10
	Individual Psychotherapy	Sept. 24, 1946, 2 semesters	Not stated
	Group Psychotherapy		
University of Maryland School of Medicine, and College of Physicians and Surgeons, Lombard and Greene Sts., Baltimore	General Pathology and Neuropathology	Arranged	Not stated
Metropolitan State Hospital, 475 Trapelo Rd., Waltham, Mass.	Psychiatry	Jan.-March 1947, 3 months	Not stated
	12th Post Graduate Seminar in Neurology and Psychiatry	Oct. 1-Dec. 10, 1946	Not stated
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1 At: Wayne County General Hospital	Neurology and Psychiatry	Arranged, 3 hours weekly	30
Creighton University School of Medicine, 306 N. 14th St., Omaha	A Psychosomatic Case Conference	Arranged	None
American Institute for Psychoanalysis 266 West End Ave., New York	Psychiatry and Psychoanalysis	Sept. 13, 1946, 10 weeks	12.50
	Readings in Psychoanalysis, Pt. II	Sept. 9, 1946, every other week, 15 sessions, 30 weeks	20
	Clinical Conferences	Nov. 21, 1946-Feb. 6, 1947	12.50
At: New School for Social Research, 66 W. 12th St., New York	Introduction to the Rorschach Method of Personality Diagnosis	Oct. 2, 1946	17.50
	Seminar on Personal Case Histories	Oct. 3, 1946, 15 weeks	25
	Neuroses and Psychoses	Sept. 27, 1946, 15 weeks	15
At: American Institute for Psychanalysis, 135 E. 62rd St., New York	Continuous Case Seminar	Sept. 10, 1946, 10 weeks	12.50
Long Island College of Medicine, Medical Society of County of Kings, 1313 Bedford Ave., Brooklyn 2 At: Jewish Hospital	Child Psychiatry	Oct. 17, 1946, 12 sessions, once weekly	20
Columbia University Faculty of Medicine, 630 West 168th St., New York 32	Neurology and Psychiatry	1st day of any month, 2 to 6 months	per month 55
At: Columbia-Presbyterian Medical Center	Symposium on Neurology and Psychiatry	Oct. 7-Dec. 13, 1946, 10 weeks, full time	250
At: Montefiore Hospital	Neuropsychiatry	Nov. 13-Dec. 14, 1946, 4 weeks, part time	75
At: Mount Sinai Hospital	Advances Applied Neuroanatomy and Neuropathology	Oct. 28, 1946-Apr. 14, 1947, 5 months, part time	75
	Applied Neuroanatomy and Neuropathology	Oct. 7, 1946-Apr. 28, 1947, 7 months, part time	125
	Recent Advances in Neurology and Psychiatry	Dec. 2-6, 1946, 4 days, full time	40
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Neurology	Oct. 1946, one month, full time	200
New York University College of Medicine, 477 First Ave., New York 16 At: Bellevue Hospital Psychiatric Division	Full Time Refresher Course in Neurology and Psychiatry	Sept. 17, 1946, 8 weeks	250
At: Lenox Hill Hospital	Neurology	Fall, 1946, 6 weeks, part time	75
Duke University School of Medicine, Durham, N. C.	Neurosurgery	Arranged, 3 months or longer, full time	None
	Neuropsychiatry	Arranged, 3 months or longer, full time	None

Postgraduate Continuation Courses for Practicing Physicians—July 1, 1946 to Jan. 15, 1947—Continued

Institution	Title of Course		Registration Fee and/or Tuition
NEUROLOGY AND PSYCHIATRY—Continued			
American College of Physicians, 4200 Pine St., Philadelphia 4 At: Portland, Ore.	Clinical Neurology and Internal Medicine	Oct. 7-12, 1946, 1 week	Members 20 Non-members 40 Free to physicians in service
At: Philadelphia	Clinical Neurology and Internal Medicine	Oct. 7-12, 1946, 1 week	Members 20 Non-members 40 Free to physicians in service
Philadelphia Psychoanalytic Institute, 206 S. 13th St., Philadelphia 7 At: Bellevue-Stratford Hotel	Orientation Course on Normal Behavior	Sept. 24, 1946-June 3, 1947, 10 sessions, 1½ hours, each	10
	Psychopathology and Childhood	Oct. 15, 1946 to May 13, 1947, 12 sessions, part time	12
	The Emotional Development of the Child	Oct. 1, 1946-May 27, 1947, 10 sessions, part time	10
	Character Formation in Childhood and its Disorders	Oct. 8, 1946-April 8, 1947, 5 sessions, part time	5
At: Philadelphia—Places arranged	Professional School Courses (on theory, therapeutic applications and practice of psychoanalysis)	Sept. 4, 1946, varies	For all courses 180
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4	Neurology-Psychiatry (Basic Studies)	Oct., 1946-June, 1947, 8 months	Not stated
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4 At: Psychopathic Department Philadelphia Hospital At: Affiliated Institutions	Clinical Psychiatry	Arranged, 8 weeks, 240 hours	160
	Clinicobiologic Neurology and Psychiatry *	Arranged, 10 weeks, 250 hours	100
Meharry Medical College, Eighteenth Ave. N. and Heffernan St., Nashville	Short courses	Arranged, 1-2 weeks	1 week 20 2 weeks 35
University of Texas Medical Branch, Galveston	Technical Procedures of the Neurological Examination	Arranged	Not stated
University of Wisconsin Medical School, 418 North Randall St., Madison 6	Course in Neuro-Psychiatry for Specialists *	Arranged, 2-6 months	per month 100
NEUROSURGERY			
University of Wisconsin Medical School, 418 North Randall St., Madison 6	Neurosurgery for Specialists *	Arranged, 2-6 months	per month 100
NUTRITION			
Creighton University School of Medicine, 306 N. 14th St., Omaha	Five Lectures on Nutrition Fundamentals	Arranged	None
University of North Carolina School of Medicine, Chapel Hill	Nutrition	Arranged	25
Duke University School of Medicine, Durham, N. C.	Nutrition	Arranged, 3 months or longer, full time	None
OBSTETRICS AND GYNECOLOGY			
Chicago Maternity Center, 1336 S. Newberry Ave., Chicago	Assistant-Residency in Obstetrics	Continuously, 4-6 months	None
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12	Personal Course in Gynecological Surgery	July 11, Aug. 29, Oct. 10, Nov. 21, 1946, 4 weeks, once weekly	80
	Practical and Didactic Course in Office Gynecology	July 10, Aug. 28, Oct. 9, Nov. 20, 1946, 4 weeks, every Wednesday	80
University of Maryland School of Medicine, Lombard and Greene Sts., Baltimore	Review of Obstetrics and Gynecology	Sept. 15-Dec. 15, 1946, 12 weeks	150
	Review of Gynecology, Oncology and Female Urology	Arranged, 10 weeks	125
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15	Gynecology	July 31, 1946, 1 month	75
Tufts Medical School, Postgraduate Division, 30 Bennet St., Boston 11 At: Affiliated Hospitals	Obstetrics and Pediatrics	Arranged, 1 month	100
Creighton University School of Medicine, 306 N. 14th St., Omaha	Obstetrics and Gynecology	Arranged	None
Long Island College of Medicine, Medical Society of County of Kings, 1313 Bedford Ave., Brooklyn 2 At: Cumberland Hospital	Complications of Pregnancy	Oct. 1, 1946, 8 sessions, twice weekly	20
At: Long Island College Hospital	Prenatal Care	Oct. 24, 1946, 8 sessions, once weekly	20
At: Long Island College of Medicine	Manikin	Oct. 22, 1946, 12 sessions once weekly	20
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: Margaret Hague Maternity Hospital	One month's course in Practical Obstetrics	First of every month	100
	Observation Course in Obstetrics	First of every month, full time	100
	Obstetrics-Internship Training	First of every month, 3 months, full time	350
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: Mount Sinai Hospital	Obstetrics and Gynecology	First of any month, 2-6 months, per month	55
	Recent Advances in Gynecology	Dec. 9-14, 1946, 6 days, full time	40
	Gynecological Endocrinology	Oct. 1-Nov. 26, 1946, Jan. 2-March 1, 1947, 24 sessions, part time	100
Columbia University—At: New York Post-Graduate Medical School, 308 E. 20th St., New York 3	Gynecology Diagnosis and Office Treatment	Sept. 30-Nov. 1, 1946, Jan. 6-Feb. 7, 1947, 15 sessions, part time	60
	Gynecology Diagnosis and Office Treatment	Dec. 2-23, Dec. 3-24, 1946, Dec. 3, 1946-Jan. 2, 1947, 10 sessions	40
	Seminar in Gynecology	Oct. 1-Nov. 30, 1946, Jan. 2-Feb. 28, 1947, 2 months, full time	225
	Surgical Anatomy as Applied to Operative Gynecology (cadaver)	Oct. 1-26, Oct. 29-Nov. 26, Dec. 3-28, 1946; Jan. 7-Feb. 1, 1947, 12 sessions part time	200
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Combined Obstetrics and Gynecology	Oct. 1, 1946, 2 months, full time	250
	Clinical and Operative (cadaver) Gynecology	Arranged, 6 weeks	175
New York University College of Medicine, 477 First Ave., New York 16 At: Lenox Hill Hospital	Histopathology for Gynecologists	Fall, 1946, 5 weeks, part time	80
Duke University School of Medicine, Durham, N. C.	Obstetrics and Gynecology	Arranged, 3 months or longer, full time	None
University of Oregon Medical School, Marquam Hill, Portland 1	Gynecology	Oct. 14-18, 1946, 5 days, full time	50
Hahnemann Medical College of Philadelphia, 235 N. 15th St., Philadelphia	Obstetrics	Arranged, 2 months	Not stated

Postgraduate Continuation Courses for Practicing Physicians—July 1, 1946 to Jan. 15, 1947—Continued

Institution	Title of Course		Registration Fee and/or Tuition
OBSTETRICS AND GYNECOLOGY—Continued			
University of Pennsylvania, 237 Medical Laboratories, Philadelphia 4	Gynecology, Obstetrics (Basic Studies)	Oct., 1946-June, 1947, annually, 8 months	Not stated
University of Tennessee College of Medicine, 874 Union Ave., Memphis	Graduate Medical Course in Caudal Analgesia	Dec. 30, 1946, 2 weeks	100
Meharry Medical College, Eighteenth Ave. N. and Hefferman St., Nashville, Tenn.	Gynecology-Obstetrics	Arranged, 3 months each subject	per quarter 125
University of Texas Medical Branch, 912 Avenue B, Galveston	Obstetrics and Gynecology	Arranged, 1 week	Not stated
University of Wisconsin Medical School, 418 North Randall St., Madison 6	Obstetrics and Gynecology for Specialists *	Arranged, 2-6 months	per month 100
OPHTHALMOLOGY			
Ophthalmological Study Council, 520 Commonwealth Ave., Boston 15 At: St. Petersburg, Fla.	Basic Subjects of Ophthalmology *	Nov. 4-Dec. 21, 1946 (lectures) Dec. 21-31, 1946 (laboratory)	lectures 250 Add. lab. 50
The Children's Memorial Hospital, 707 Fullerton Ave., Chicago	Postgraduate Conference in Neuromuscular Anomalies of the Eyes *	Nov. 3-8, 1946, 6 days	50
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12	Clinical Ophthalmology	Every 2 weeks, 2 weeks	50
Tufts Medical School, Postgraduate Division, 30 Bennet St., Boston 11 At: Affiliated Hospitals	Ophthalmoscopy	Nov. 4-30, 1946, 1 month, part time	50
	Ophthalmology	Monthly, 3 mornings a week	50
Louisiana State University School of Medicine, 1430 Tulane Ave., New Orleans	Physiological Optics *	Sept., 1946, 1 month	100
American Academy of Ophthalmology and Otolaryngology, 100 First Ave. Bldg., Rochester, Minn.	Home Study—Correspondence Course in Ophthalmology-Otolaryngology	Sept., 1946-June, 1947, 9 months	10
Creighton University School of Medicine, 306 N. 14th St., Omaha	Ophthalmology	Arranged	None
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: Montefiore Hospital	Elementary Ophthalmoscopy	Jan. 6-March 3, 1947, 8 weeks, part time	30
	Extra-ocular Muscles	Oct. 10-Dec. 5, 1946, 8 weeks, part time	15
	Histopathology of the Eye	Oct. 7-Dec. 23, 1946, 11 weeks, part time	35
	Physiological Optics	Oct. 8-Dec. 10, 1946, 9 weeks, part time	30
	Embryology of the Eye	Oct. 9-Nov. 27, 1946 7 weeks, part time	25
	External Diseases of the Eye	Oct. 10, 1946-Jan. 2, 1947 7 weeks, part time	20
	Ophthalmoscopy (Elementary)	Oct. 7-Dec. 23, 1946, 11 weeks, part time	20
	Slit Lamp Microscopy of the Living Eye *	Oct. 9-Nov. 27, 1946, 7 weeks, part time	20
At: Mount Sinai Hospital	Ophthalmic Surgery	Oct. 9, 1946-Jan. 8, 1947, 13 weeks, part time	75
	Refraction *	Oct. 10, 1946-Jan. 2, 1947 12 weeks, part time	35
	Histopathology of the Eye *	Oct. 22-Nov. 29, 1946, 6 weeks, part time	40
At: New York Eye and Ear Infirmary, 218 Second Ave., New York 3	Neuro-Ophthalmology	Arranged, 1 month, part time	60
	Perimetry *	Arranged, 1 month, part time	40
	Ocular Muscles *	Arranged, 1 month, part time	60
	Operative Eye Surgery *	Arranged, 1 month, part time	100
	Ophthalmoscopy *	Arranged, 1 month, 3 days a week, part time	40
	X-Ray *	Arranged, 6 hours, part time	25
	Bacteriology, Serology and Immunology *	Arranged, 1 month, part time	40
	Embryology *	Arranged, 1 month, part time	40
	Anatomy of the Temporal Bone *	Arranged, 1 month, part time	45
	Anatomy and Physiology *	Arranged, 1 month, part time	40
	Glaucoma Clinic *	Arranged, 10 hours, part time	40
	Slit Lamp Microscopy *	Ararnged, 1 month, part time	50
	Refraction *	Arranged, 3 months, 3 nights weekly, part time	100
	Plastic Eye Surgery (Operating Room)*	Arranged, 6 weeks, 2 days weekly, part time	75
	Physiologic Optics *	Arranged, 2 months, part time	75
	External Eye Diseases—Ocular Therapy *	Arranged, 1 month, part time	40
Columbia University—At: New York Post-Graduate Medical School, 303 E. 20th St., New York 3.	Ophthalmic Neurology *	Nov. 11-15, 1946, 5 days, part time	45
	Differential Diagnosis with the Slit Lamp *	Nov. 11-15, 1946, 5 days, part time	45
	Surgery of the Eye *	Nov. 4-9, 1946, 6 days, full time	75
	Anomalies of Ocular Muscles *	Oct. 28-Nov. 1, 1946, full time	60
	Motor Anomalies of the Eye *	Oct. 28-Nov. 1, 1946, full time	60
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Ophthalmology, clinical and operative (cadaver) and refraction	Oct. 1, 1946 Jan. 2, 1947, 3 months	275
	Ophthalmology	Oct. 1, 1946-Jan. 2, 1947, 6 weeks	50
	Refraction	Arranged, 6 weeks, part time	100
Duke University School of Medicine, Durham, N. C.	Ophthalmology	Arranged, 3 months or longer, full time	None
University of Pennsylvania, 237 Medical Laboratories, Philadelphia 4	Ophthalmology (Basic Studies)	Oct., 1946-June, 1947, 8 months	Not stated
	Ophthalmic Histology and Pathology	Arranged, 8 weeks, 96 hours	200
University of Virginia Department of Medicine, Charlottesville	Postgraduate Course in Ophthalmology and Otolaryngology	Dec. 10-13, 1946, 4 days	30
ORTHOPEDIC SURGERY			
State University of Iowa College of Medicine, University Campus, Iowa City	Orthopedic Surgery	Sept., 1946-June, 1947 10 months	300
Columbia University—At: New York Post-Graduate Medical School, 303 E. 20th St., New York 3.	Functional Anatomy in Relation to Orthopedics	Oct. 14-Nov. 15, 1946, 10 sessions, part time	60
	Orthopedics in General Practice	Nov. 18-23, 1946, 6 days, full time	50

Postgraduate Continuation Courses for Practicing Physicians—July 1, 1946 to Jan. 15, 1947—Continued

Institution	Title of Course		Registration Fee and/or Tuition
ORTHOPEDIC SURGERY—Continued			
Duke University School of Medicine, Durham, N. C.	Orthopedic Surgery	Arranged, 3 months or longer, full time	None
University of Pennsylvania, 237 Medical Laboratories, Philadelphia 4	Orthopedics (Basic Studies)	Oct.,1946-June, 1947, 8 months, annually	Not stated
OTOLARYNGOLOGY			
University of Southern California School of Medicine, 3551 University Ave., Los Angeles At: Los Angeles County Hospital	Otolaryngology	Sept., 1946, 12 weeks, full time	Tuition 250 Regis. fee 5
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12	Clinical Otolaryngology	Every 2 weeks, 2 weeks	50
University of Illinois College of Medicine, 1853 W. Polk St., Chicago	Bronchoesophagology	Arranged, 2 weeks	100
	Basic Otolaryngology	Sept. 30, 1946, 8 months	450+
	Otolaryngology Refresher *	Arranged, 1-2 weeks	Lab. 300 per week 50
Tufts Medical School, Postgraduate Division, 30 Bennet St., Boston 11 At: Affiliated Hospitals	Otolaryngology	Monthly, mornings	50
Creighton University School of Medicine, 306 N. 14th St., Omaha	Otolaryngology	Arranged	None
Columbia University Faculty of Medicine, 630 West 168th St., New York 32	Otolaryngology	First day of any month, 2-6 months	per month 55
At: New York Post Graduate Medical School, 303 E. 20th St., New York 3	Symposium on Otolaryngology *	Oct. 14-25, 1946, 2 weeks, full time	90
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Otolaryngologic Procedures	Nov., 1946, 1 month, part time	100
	Otolaryngology Clinical	Oct. 1, 1946-Jan. 2, 1947, 6 weeks	75
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Otolaryngology and Ophthalmology (Clinical)	Oct. 1, 1946-Jan. 2, 1947	100
Duke University School of Medicine, Durham, N. C.	Otolaryngology	Arranged, 3 months or longer	None
University of Pennsylvania, 237 Medical Laboratories, Philadelphia 4	Otolaryngology Basic Studies	Oct., 1946-June, 1947, annually	Not stated
OTOLOGY			
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: New York Eye and Ear Infirmary	Operative Ear Surgery (cadaver)*	Arranged, 1 month, 2 or 3 afternoons a week	110
	Clinical Otology *	Arranged, 1 month, 3 afternoons a week, part time	40
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Advanced Otology	Arranged	250
OTORHINOLARYNGOLOGY			
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: New York Eye and Ear Infirmary	Sinuses	Arranged, 1 month	100
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Head and Neck Dissection	Arranged, 6 weeks	150
	Combined Eye, Ear, Nose and Throat Course	Oct. 1, 1946-Jan. 2, 1947, 3 months	600
New York University College of Medicine, 477 First Ave., New York 16 At: St. Vincent's Hospital	The Larynx	Fall, 1946, 16 weeks, Tuesday and Friday, part time	Civilian 200 Veteran 150
PATHOLOGY			
Washington University School of Medicine, Kingshighway and Euclid Ave., St. Louis	Graduate Course in Pathology	July 1 or Oct. 1, 1946, 36 weeks	500
Creighton University School of Medicine, 306 N. 14th St., Omaha	Microscopical Pathology	Arranged, 2 weeks	None
	Clinical Pathological Conference	Arranged	None
	Senior Pathological Conference	Arranged	None
	Senior Clinicopathologic Conference	Arranged	None
At: St. Josephs Hospital	Surgical Pathology	Arranged, 1 or 2 weeks	None
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: Mount Sinai Hospital	General and Special Pathology	Oct. 19, 1946-Jan. 25, 1947, 14 weeks, part time	45
Columbia University—At: New York Post-Graduate Medical School, 303 E. 20th St., New York 3.	Gross and Microscopic Pathology	Sept. 16-Oct. 25, 1946, 6 weeks, part time	75
	Surgical Pathology	Sept. 17-Dec. 26, 1946, 15 weeks, part time	150
	Pathology of the Blood and Blood Forming Organs *	Nov. 4-29, 1946, 4 weeks, part time	75
	Gynecological Pathology *	Sept. 25, 1946-Jan. 15, 1947, 16 sessions, part time	100
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Pathology	Arranged 16, weeks, part time	200
	Clinical Pathology	Arranged, 26 hours, part time	25
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Pathology and Bacteriology	Arranged	Arranged
New York University College of Medicine, 477 First Ave., New York 16 At: Lenox Hill Hospital	Pathology for Surgeons	Fall, 1946, Winter, 1947, 5 weeks, Monday and Thursday evenings	50
University of North Carolina School of Medicine, Chapel Hill	Pathology	Arranged	25
Duke University School of Medicine, Durham, N. C.	Pathology	Arranged, 3 months or longer, full time	None
	Gross and Microscopic Conferences on Surgical Pathology	Arranged, 3 months or longer, full time	None
	Systematic Review of General and Surgical Pathology	Arranged, 3 months or longer, full time	None
	Staff Appointments in Pathology	Arranged, 3 months or longer, full time	None
	Pathological Research	Arranged, 3 months or longer, full time	None
University of Texas Medical Branch, 912 Avenue B, Galveston	Surgical Pathology	Arranged	Not stated
PEDIATRICS			
Children's Memorial Hospital, 707 Fullerton Ave., Chicago	Postgraduate Course in Pediatrics	Sept. 30-Oct. 26, 1946	100
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12	Clinical Course in Pediatrics	Every 2 weeks, 2 weeks or 1 month	2 weeks 60 1 month 100
University of Minnesota Medical School, Minneapolis At: Center for Continuation Study	Diseases of Children	Fall, 1946, 6 weeks	Arranged
Creighton University School of Medicine, 306 N. 14th St., Omaha At: Affiliated Institutions	Pediatrics	Arranged	None

Postgraduate Continuation Courses for Practicing Physicians—July 1, 1946 to Jan. 15, 1947—Continued

Institution	Title of Course		Registration Fee and/or Tuition
	PEDIATRICS—Continued		
Long Island College of Medicine, Medical Society of County of Kings, 1313 Bedford Ave., Brooklyn 2 At: Beth El Hospital At: Kings County Hospital	Clinical Pediatrics	Oct. 7, 1946, 10 sessions, twice weekly	20
	Heart Disease in Childhood	Oct. 12, 1946, 10 sessions, once a week	20
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: Mount Sinai Hospital	Pediatrics	First of any month, 2-6 months, per month	55
	Clinical Pediatrics	Oct. 8-Dec. 19, 1946, 10 weeks, part time	65
Columbia University—At: New York Post-Graduate Medical School, 303 E. 20th St., New York 3.	Allergy for Pediatricians *	Oct. 7-11, 1946, 5 days, full time	45
	Cardiology for Pediatricians *	Nov., 1946, 5 days, full time	45
	Symposium on Recent Advances in Pediatrics	Nov. 18-23, 1946, 6 days	50
	Clinical Pediatrics	Oct. 7-Nov. 2, 1946, 4 weeks, full time	125
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Clinical Pediatrics	Arranged, 1 month	150
	Pediatrics	Arranged, 6 months	300
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Pediatrics	Arranged, 4 weeks, part time	Not stated
New York University College of Medicine, 477 First Ave., New York 16 At: Beth Israel Hospital	General Pediatrics Including Diseases of Newborn	Fall, 1946, 12 weeks, Tuesday and Friday, part time	Civilian 100 Veterans 75
New York University College of Medicine, 477 First Ave., New York 16 At: Lenox Hill Hospital	Pediatrics	Fall, Winter, 1946, 8 weeks, Tuesday and Friday, part time	50
Duke University School of Medicine, Durham, N. C.	Pediatrics	Arranged, 3 months or longer, full time	None
Southern Pediatric Seminar, Saluda, N. C.	Southern Pediatric Seminar	July 15-27, 1946	Not stated
University of Pennsylvania, 237 Medical Laboratories, Philadelphia 4	Pediatrics (Basic Studies)	Oct., 1946-June, 1947, 8 months, annually	Not stated
Meharry Medical College, Eighteenth Ave. N. and Hefferman St., Nashville, Tenn.	Pediatrics	Arranged, 3 months	per quarter 125
University of Texas Medical Branch, 1912 Ave. B, Galveston	Pediatrics	Oct. 28-Nov. 2, 1946	25
Washington State Medical Association, 1215 Fourth Ave., Seattle At: Children's Orthopedic Hospital	Refresher Course in Pediatrics	Every month, 4 weeks	15
University of Wisconsin Medical School, 418 N. Randall St., Madison 6	Course in Pediatrics for Specialists *	Arranged, 2-6 months	per month 100
	PHARMACOLOGY		
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1	Seminar in Pharmacology	July-Sept., 1946	10
Creighton University School of Medicine, 306 N. 14th St., Omaha	Pharmacology	Arranged, 6 weeks tentative	None
University of North Carolina School of Medicine, Chapel Hill	Pharmacology	Arranged	25
Duke University School of Medicine, Durham, N. C.	Pharmacology	Arranged, 3 months or longer, full time	None
	Recent Advances in Pharmacology	Arranged, 10-12 weekly seminars, part time	None
	PHYSICAL MEDICINE		
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1 At: Grace Hospital	Physical Medicine	July-Sept., 1946	30
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: Mount Sinai Hospital	Physical Therapy in General Practice	Oct. 22, 1946-Feb. 27, 1947, 4 months, part time	70
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	General Course in Physical Medicine	Arranged, 4 weeks, part time	100 Half fee to men in service
New York University College of Medicine, 477 First Ave., New York 16 At: Bellevue Hospital	Physical Medicine	Fall, 1946, 3 months, daily	200
University of Pennsylvania, 237 Medical Laboratories, Philadelphia 4	Physical Medicine (Basic Studies)	Oct., 1946-June, 1947, 8 months, annually	Not stated
University of Wisconsin Medical School, 418 N. Randall St., Madison 6	Physical Medicine for Specialists *	Arranged, 2-6 months	per month 100
	PHYSIOLOGICAL CHEMISTRY		
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1	Review, Seminar Physiological Chemistry	July-Sept., 1946	Each course 10
	PHYSIOLOGY		
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: Mount Sinai Hospital	Physiology of the Disgestive Tract	Dec. 2-21, 1946, 3 weeks part time	30
Columbia University—At: New York Post-Graduate Medical School, 303 E. 20th St., New York 3	Normal and Pathological Physiology	Sept. 23-Oct. 4, 1946	75
University of North Carolina School of Medicine, Chapel Hill	Physiology	Arranged	25
Duke University School of Medicine, Durham, N. C.	Physiology	Arranged, 3 months or longer, full time	None
	Recent Advances in Physiology	Arranged, 10 to 12 weekly seminars, part time	None
	POLIOMYELITIS		
Georgia Warm Springs Foundation, Warm Springs	Treatment of Acute and Convalescent Poliomyelitis	First Monday of each month, 5 consecutive days	None
	PROCTOLOGY		
Tufts Medical School, Postgraduate Division, 30 Bennett St., Boston 11	Proctology III	Monthly, part time	100
	Proctology II	1 month, full time, Nov. 1946	250
	Proctology I	Oct. 21-26, 1946, 6 days, full time Oct. 7, 1946	40
Long Island College of Medicine, Medical Society of County of Kings, 1313 Bedford Ave., Brooklyn 2 At: Jewish Hospital	Proctology	8 sessions,	25
New York Polyclinic Medical School and Hospital, 341 W. 50th St., New York 19	Combined Proctology and Gastroenterology (Clinical) and operative (Cadaver)	Oct. 1, 1946-Jan. 2, 1947, 6 weeks	200
New York University College of Medicine, 477 First Ave., New York 16	Proctology	8 weeks, part time	Veterans 125
At: Bellevue Hospital	Proctology	Fall, 1946, not stated	Civilians 175

Postgraduate Continuation Courses for Practicing Physicians—July 1, 1946 to Jan. 15, 1947—Continued

Institution	Title of Course		Registration Fee and/or Tuition
PUBLIC HEALTH			
Yale University School of Medicine, Dept. of Public Health, 333 Cedar St., New Haven, Conn.	Public Health	1 academic year, Trimester basis begins Sept. 16, 1946	Year 400
Johns Hopkins University School of Hygiene and Public Health, 615 N. Wolfe, Baltimore, Md.	Public Health	8 months, Oct. 1, 1946	Not stated
Albany Medical College and New York State Department of Health, 47 New Scotland Ave., Albany, N. Y.	Extension Course for Grade II Health Officers	1 year course given continuously, correspondence course	40
Columbia University School of Public Health, 630 W. 168 St., New York	1—Public Health 2—Hospital Administration	1 year minimum	Academic year 400
University of North Carolina School of Public Health, Chapel Hill, N. C.	Public Health	1 to 3 quarters, Sept. to June	per quarter 160
Duke University School of Medicine, Durham, N. C.	Public Health	3 months or longer, arranged, full time	None
Vanderbilt University School of Medicine, Nashville, Tenn.	Public Health and Preventive Medicine	1 to 3 months, April to October, 1946	3 mos. 166.66
	Master of Public Health First Semester	4 months beginning Sept. 23, 1946	per semester 200
RADIOLOGY			
American College of Radiology, 20 N. Wacker Drive, Chicago At: Various Medical Schools and Hospitals	Special Residencies	6 months beginning various times	Not stated
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago	Clinical Roentgenology	2 weeks every 2 weeks	20
	Fluoroscopy	Weekly	Not stated
	X-Ray Interpretation	Weekly	Not stated
	Deep X-Ray Therapy	Weekly	Not stated
	X-Ray Therapy	2 weeks every 2 weeks	110
		1 month	200
	Lecture and Clinical Roentgenology	2 weeks every 2 weeks	125
Wayne University College of Medicine, 1516 St. Antoine St., Detroit	Radiology Conference	Arranged, part time	20
At: Wayne County General Hospital	Radiology	3 months, part time, July to Sept., 1946	10
University of Minnesota Center for Continuation Study, Minneapolis	Radiologic Diagnosis	2-4 weeks, Fall, 1946	Arranged
Creighton University School of Medicine, 306 N. 14th St., Omaha	Radiology	Arranged	None
Long Island College of Medicine, Medical Society of the County of Kings, 1313 Bedford Ave., Brooklyn	X-Ray Diagnosis	10 sessions, Oct. 8, 1946	25
	Biologic Fundamentals of Radiation Therapy	10 sessions, part time, Oct. 8, 1946	20
Columbia University College of Physicians and Surgeons, 630 W. 168 St., New York At: Affiliated Hospitals	Symposium on Diagnostic Radiology	10 weeks, Sept. 30 to Dec. 6, 1946	250
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Radiology	2 months, part time, arranged	150
New York Polyclinic Medical School and Hospital, 341 W. 50th St., New York 19	Radiology	3 months, Oct. 1, 1946-Jan. 2, 1947	200
New York University College of Medicine, 477 First Ave., New York At: City Hospital	Diagnostic Radiology	12 weeks, part time, Fall, 1946	100
At: Beth Israel Hospital	Roentgenology	8 weeks, part time, Fall, 1946	50
Duke University School of Medicine, Durham, N. C.	Radiology	3 months or longer, arranged full time	None
American Roentgen Ray Society, University Hospital, Iowa City, Ia. At: Cincinnati, Ohio	Instructional courses in diagnostic and therapeutic radiology and radiation physics	4 days, Sept. 17-20, 1946	5
University of Oregon Medical School, Marquam Hill, Portland, Ore.	Radiology	5 days, full time, Nov. 11-15, 1946	50
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4	Radiology (Basic Studies)	Oct.-June, annually	Not stated
Meharry Medical College, 1005 18 Ave. No. at Heffernan St., Nashville, Tenn.	Radiology	3 months arranged	per quarter 125
Vanderbilt University School of Medicine, Nashville, Tenn.	X-Ray	1 to 3 months, April to Oct., 1946	3 months 166.66
SURGERY			
University of Southern California School of Medicine, 3551 University Ave., Los Angeles At: Los Angeles County Hospital	General Surgery	Oct. 7, 1946, 4 weeks, full time	Tuition 200 Regis. fee 5
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago 12	General Surgery	July 15, Aug. 12, Sept. 9, Oct. 7, Nov. 4, 1946, 4 weeks	300
	Thoracic Surgery	Sept. 23, Oct. 21, Nov. 25, 1946, 1 week	100
	Surgical Technique	Every 2 weeks, 2 weeks	200
	Surgery of the Colon and Rectum	Sept. 16, Oct. 14, Nov. 25, 1946, 1 week	100
	Personal Course Vaginal Surgery	Sept. 16, Oct. 14, Nov. 25, 1946	100
	2 Weeks' Course Surgical Anatomy and Clinical Surgery	July 29, Aug. 26, Sept. 23, Oct. 23, Nov. 18, 1946, 2 weeks	150
University of Maryland School of Medicine, Lombard and Greene Sts., Baltimore	Surgical Anatomy	Arranged, 15 weeks	150
Tufts Medical School, Postgraduate Division, 30 Bennett St., Boston 11 At: Affiliated Hospital	Surgery	Arranged, 1 month	50
	Principles of Surgical Techniques	Oct. 7-Nov. 29, 1946, 2 months, 3 days a week	200
Creighton University School of Medicine, 306 N. 14th St., Omaha	Ward Walks	Arranged	None
	Medical and Surgical Pathological Conferences	Arranged	None
	12 General Lectures on Modern Surgical Procedures	Arranged	None
	General Surgical Clinics	Arranged	None
	General Surgery in the Dispensary	Arranged	None

Postgraduate Continuation Courses for Practicing Physicians—July 1, 1946 to Jan. 15, 1947—Continued

Institution	Title of Course		Registration Fee and/or Tuition
	SURGERY—Continued		
Columbia University—At: New York Post-Graduate Medical School, 303 E. 20th St., New York 3	Basic Course in Traumatic Surgery*	Jan. 13-Feb. 21, 1947	200
	Surgery of the Hand*	Oct. 14-19, 1946, 6 days	60
	Diagnosis and Treatment of Trauma	Nov. 11-16, 1946, 6 days, full time	50
	Seminar in Traumatic Surgery*	Sept. 16-27, 1946, 2 weeks, full time	90
	Dissection and Surgical Anatomy*	Arranged, 12 sessions, part time	150
	Surgical Anatomy as Applied to Colon and Rectal Surgery (Cadaver)*	Arranged, 6 sessions, full time	100
	Surgical Anatomy as Applied to Thoracic Surgery (Cadaver)*	Arranged, 12 sessions,	200
	Surgical Anatomy as Applied to General Surgery (Cadaver)*	Arranged, 12 sessions,	200
	Review of General Surgery for Surgeons*	Nov. 4-30, 1946, 4 weeks, full time	125
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Surgical Technique	Arranged, 75 hours	375
	Thoracic Surgery	Nov., 1946, 3 weeks	325
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Combined Surgical Course	Oct. 1, 1946-Jan. 2, 1947	350
New York University College of Medicine, 477 First Ave., New York 16 At: Lenox Hill and Triboro Hospitals	Recent Advances in Thoracic Surgery*	Fall, 1946, 1 month, full time	250
Duke University School of Medicine, Durham, N. C.	Surgery	Arranged, 3 months or longer, full time	None
Interstate Postgraduate Medical Association, Madison, Wis. At: Cleveland, Ohio	Interstate Postgraduate Assembly	Oct. 15-18, 1946	Regis. fee
University of Oregon Medical School, Marquam Hill, Portland 1	General Surgery	Oct 21-25, 1946, 5 days, full time	50
University of Pennsylvania, 237 Medical Laboratories, Philadelphia 4	Surgery (Basic Studies)	Oct.,1946-June, 1947, annually	Not stated
Meharry Medical College, Eighteenth Ave. N. and Heffernan St., Nashville, Tenn.	Surgery	Arranged, 3 months	per quarter 125
Vanderbilt University School of Medicine, Twenty-first Ave. at Edgehill, Nashville, Tenn.	Surgery	Oct. 1946, 1-3 months	166.66
University of Texas Medical Branch, 912 Avenue B, Galveston	General Surgery	To be announced, 1 week	Not stated
University of Vermont College of Medicine, Pearl St., College Park, Burlington	Course in Surgery	Arranged, minimum of 4 weeks, daily, part time	Not stated
University of Wisconsin Medical School, 418 North Randall St., Madison 6	Surgery Course for Specialists*	Arranged, 2-6 months	per month 100
	THERAPY		
American College of Physicians, 4200 Pine St., Philadelphia 4 At: St. Louis	Chemo Therapy	Dec. 2-7, 1946, 5 days	Members 20 Non-members 40 Physicians in service free
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: Mount Sinai Hospital	Recent Advances in Therapy	Oct. 23-Dec. 11, 1946, 7 weeks, part time	25
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Applied Pharmacology and Therapeutics	Fall term, 1946, 4 months	100
New York University College of Medicine, 477 First Ave., New York 16 At: Bellevue Hospital	Refresher Course in Radiation Therapy	Fall, 1946, 8 weeks, 3 hours daily	Civilians 175 Veterans 125
University of Texas Medical Branch, 912 Avenue B, Galveston	Electro-shock Therapy	Arranged	Not stated
	UROLOGY		
Creighton University School of Medicine, 306 N. 14th St., Omaha	Urology	Arranged, 6 weeks, tentative	None
Long Island College of Medicine, Medical Society of County of Kings, 1313 Bedford Ave., Brooklyn 2 At: Long Island College Hospital	Urology	Oct. 1, 1946, 1 month or longer	per month 25
Columbia University Faculty of Medicine, 630 West 168th St., New York 32	Urology	First day of any month, 2-6 months	per month 55
Columbia University—At: New York Post-Graduate Medical School, 303 E. 20th St., New York 3	Advanced Course in Urology for Specialists*	Oct. 1-Nov. 30, 1946, 2 months, full time	225
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Urology	Arranged, 6 months	500
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Urology	Oct. 1, 1946, 8 months, full time	800
New York University College of Medicine, 477 First Ave., New York 16	Clinical Urology	Fall, 1946, 6 weeks, daily, part time	100
Duke University School of Medicine, Durham, N. C.	Urology	Arranged, 3 months or longer, full time	None
New York Hospital, 525 E. 68th St., New York	Urology	July 1, 1946-Jan. 15, 1947, 6 months or longer	500
University of Pennsylvania, 237 Medical Laboratories, Philadelphia 4	Urology (Basic Studies)	Oct., 1946-June, 1947, annually	Not stated
	VENEREAL DISEASE		
University of California, University Extension, San Francisco	Course in Venereal Diseases	Sept., 1946, 16 weeks	Not stated
Bureau of Social Hygiene, Department of Health, New York At: Central Clinic, 125 Worth St., New York	Practical Course in Diagnosis, Treatment and Control of Venereal Diseases	Every 2 weeks, 1 morning per week	None
	Seminar in Diagnosis and Treatment of Venereal Diseases. Lectures	Fall, Winter, 1946, 14 sessions	None
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: Mount Sinai Hospital	Venereal and Skin Diseases	Nov. 25-29, 1946, 5 days, part time	20
Institute for the Study of Venereal Disease, 3400 Spruce St., Philadelphia	3 month Course in Applied Venereal Disease Epidemiology	Arranged, 3 months	Arranged
	Intensive Training Course in Venereal Disease Control	Arranged, 10 days	25
	Venereal Disease Review Course	Arranged, 3 weeks	35
	Essential Basic Training Course	Arranged, 6 months	125
	Intensive Review Course	Arranged, 4 weeks	50

* For specialists only.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Medical Practice Acts: Uncorroborated Evidence of Employee of Medical Grievance Committee.—The Board of Regents of the University of the State of New York revoked the petitioner's license to practice medicine in that state. On appeal to the appellate division the determination of the Board of Regents was annulled, from which judgment the Board of Regents appealed to the Court of Appeals of New York.

One of the reasons why the appellate division reversed the Board of Regents finding was that the two women who testified against the doctor were employed by the Medical Grievance Committee as paid investigators and that, like private detectives in divorce cases, they require corroboration, of which there was none. The Court of Appeals said that where corroboration of private detectives is taken in divorce cases it is because of a generally accepted suspicion which does not apply to public employees. No corroboration, said the Court of Appeals, was required here and the evidence of the two women investigators was sufficient. The order of the appellate division was therefore reversed and the determination of the Board of Regents confirmed.—*Epstein v. Board of Regents of University of New York, 65 N. E. (2d) 756 (N. Y., 1946).*

Dental Practice Acts: Splitting Fees with Lay Solicitors.—Pursuant to a determination by the state board of dental examiners that the defendant, a licensed dentist, had been guilty of unprofessional conduct in the practice of his profession, and the approval of that finding by the Board of Regents, the commissioner of education suspended defendant's license to practice dentistry for one year. On appeal, the appellate division annulled the order of suspension and from such action the Board of Regents appealed to the Court of Appeals of New York.

The defendant was licensed to practice dentistry in New York in 1919. In 1939 he employed a layman, who at no time had been licensed to practice dentistry in New York, to contact prospective patients and arrange for their transportation to the defendant for dental treatment. This layman received a commission varying from 20 per cent to 50 per cent of the fees collected from such patients and from April 1939 to October 1942 he received about $20,000 from such sources plus $10 a week for maintenance of an automobile which he used for carrying patients to and from the defendant's office.

The education law, during the time involved in this suit, provided:

> 2. The license and registration of a practitioner of dentistry may be revoked, suspended or annulled, . . . upon decision and due hearing in any of the following cases: (a) that the dentist has been guilty of immoral conduct; . . . (h) that the dentist has been otherwise or in any other way guilty of unprofessional conduct.

It is urged by the defendant that, unless the Board of Regents prescribes by regulation the act which shall constitute unprofessional conduct, no dentist may be disciplined under section 1311, subdivision 2, clause (h). That never has been the law of this state, said the Court of Appeals. It has never been necessary for the legislature or the Board of Regents to define with particularity acts which would constitute unprofessional conduct, whether in the fields of dentistry or of pharmacy. In a prior case the court had pointed out that in vocations, like dentistry, more recently accepted as professions, professional standards are perhaps less uniform, less well understood and less rigidly defined. Nonetheless, the standards of conduct generally accepted by practitioners in the state of New York are not so indefinite that they cannot be determined by qualified persons. They are part of the ethics of the profession and "what is generally called the 'ethics' of the profession is but the consensus of expert opinion as to the necessity of such standards." Every member of the profession should be regarded as an expert for such purpose, the court continued. There is a moral dereliction in failure by any member of a profession to apply in professional practice the standards which, by consensus of opinion in the profession, are necessary. It seems to us, concluded the court, that there is one course of conduct which in each and every profession is known as a matter of common knowledge to be improper and unprofessional. That is conduct by which, after a professional man has been licensed by the state, he enters into a partnership in his professional work with a layman, by the terms of which he divides with the latter, on a percentage basis, payments made by client or patient for professional services rendered. That is what the defendant did here. Accordingly the Court of Appeals reversed the ruling in favor of the defendant and confirmed the determination of the Board of Regents suspending the defendant's license.—*Bell v. Board of Regents of University of State of New York, 65 N. E. (2d) 184 (N. Y., 1946).*

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and the Examining Board in Specialties were published in THE JOURNAL, June 22, Page 702.

BOARDS OF MEDICAL EXAMINERS

ALABAMA: Montgomery, Jan. 21-23. Sec., Dr. B. F. Austin, 519 Dexter Ave., Montgomery 4.

ARIZONA: * Phoenix, 1st week in July. Sec., Dr. J. H. Patterson, 826 Security Bldg., Phoenix.

CONNECTICUT: * *Medical.* Hartford, July 9-10. Sec. to the Board, Dr. Creighton Barker, P. O. Box 1438, New Haven. *Homeopathic.* Derby, July 9-10. Sec., Dr. Joseph H. Evans, 1488 Chapel St., New Haven.

DELAWARE: *Examination.* Dover, July 9-11. *Reciprocity.* Dover, July 16. Sec., Medical Council of Delaware, Dr. J. S. McDaniel, 229 S. State St., Dover.

GEORGIA: Atlanta, Oct. 8-10. Sec., State Examining Boards, Mr. R. C. Coleman, 111 State Capitol, Atlanta 3.

HAWAII: Honolulu, July 8-11. Sec., Dr. S. E. Doolittle, 881 S. Hotel St., Honolulu 53.

IDAHO: Boise, July 9. Dir., Bureau of Occupational Licenses, Miss Agnes Barnhart, 355 State Capitol Bldg., Boise.

INDIANA: *Examination.* Indianapolis, June 1947. Exec. Sec., Board of Medical Registration & Examination, Miss Ruth V. Kirk, 627 K. of P. Bldg., Indianapolis 4.

KENTUCKY: *Examination.* Louisville, Dec. 16-18. Sec., State Board of Health, Dr. P. E. Blackerby, 620 S. Third St., Louisville 2.

MAINE: Augusta, July 2-3. Sec., Board of Registration of Medicine, Dr. Adam P. Leighton, 192 State St., Portland.

MARYLAND: *Homeopathic.* Baltimore, June 18-19. Sec., Dr. J. A. Evans, 612 W. 40th St., Baltimore. *Medical.* Baltimore, Dec. 10-13. Sec., Dr. J. T. O'Mara, 1215 Cathedral St., Baltimore.

MASSACHUSETTS: Boston, July 9-12. Sec., Board of Registration in Medicine, Dr. H. Q. Gallupe, 413-F State House, Boston 33.

MICHIGAN: * Lansing, Oct. 9-11. Sec., Board of Registration in Medicine, Dr. J. E. McIntyre, 100 W. Allegan St., Lansing 8.

MONTANA: Helena, Sept. 30-Oct. 2. Sec., Dr. O. G. Klein, First Nat'l Bank Bldg., Helena.

NEVADA: *Reciprocity.* Carson City, Aug. 5. Sec., Dr. G. H. Ross, 215 N. Carson St., Carson City.

NEW HAMPSHIRE: Concord, Sept. 12-13. Sec., Board of Registration in Medicine, Dr. John S. Wheeler, 107 State House, Concord.

NEW MEXICO: * Santa Fe, Oct. 7-8. Sec., Dr. LeGrand Ward, 141 Palace Ave., Santa Fe.

NORTH CAROLINA: *Endorsement.* Morehead City, July 5. Act. Sec., Mrs. L. McNeill, 226 Hillsboro St., Raleigh.

NORTH DAKOTA: Grand Forks, July 2-5. Sec., Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

OHIO: *Examination.* Columbus, Dec. *Endorsement.* Columbus, July 2. Sec., State Medical Board, Dr. H. M. Platter, 21 W. Broad St., Columbus.

OREGON: * *Examination.* Portland, July 24-26, Exec. Sec., Miss Lorienne M. Conlee, 608 Failing Bldg., Portland 4.

PENNSYLVANIA: *Examination.* Harrisburg, Oct. Act. Sec., Bureau of Professional Licensing, Dept. of Public Instruction, Mrs. M. G. Steiner, 351 Education Bldg., Harrisburg.

SOUTH DAKOTA: * Pierre, July 16-17. Sec., Medical Licensure, State Board of Health, Dr. Gilbert Cottam, Capitol Bldg., Pierre.

VIRGINIA: * Richmond, Dec. 3-6. Sec., Dr. J. W. Preston, 30½ Franklin Rd., Roanoke.

WASHINGTON: * Seattle, July 11-12. Sec., Department of Licenses, Miss Nell Adams, Olympia.

WEST VIRGINIA: Charleston, July 15-17. Sec., Public Health Council, Dr. John E. Offner, State Capitol, Charleston 5.

WYOMING: *Examination.* Cheyenne, Oct. 7-8. Sec., Dr. G. M. Anderson, Capitol Bldg., Cheyenne.

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

DISTRICT OF COLUMBIA: *Examination.* Washington, Oct. 21-22. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington.

IOWA: *Examination.* Des Moines, July 9. Sec., Division of Licensure & Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines 19.

MICHIGAN: *Examination.* Ann Arbor, Oct. 11-12. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing.

NEBRASKA: *Examination.* Omaha, Oct. 1-2. Dir., Mr. Oscar F. Humble, 1009 State Capitol Bldg., Lincoln 9.

OREGON: Portland, July 6. Sec., Mr. C. D. Byrne, Univ. of Oregon, Eugene.

RHODE ISLAND: *Examination.* Providence, Aug. 14. Sec., Division of Examiners, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1936 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American J. Digestive Diseases, Fort Wayne, Ind.

13:59-102 (March) 1946

Protein Deficiency in Man. M. Sahyun.—p. 59.
Abdominal Pain in Pneumonia. H. Gauss.—p. 73.
*Physiologic Use of Water in Constipation. J. A. McKenney.—p. 78.
Vitamins and Hormones in Nutrition: II. Endocrine Dyscrasia. B. F. Sieve.—p. 80.
Redundancy of Colon. A. Galambos and Wilhelmina Mittelmann Galambos.—p. 87.

Physiologic Use of Water and Constipation.—McKenney says that some twenty years ago observations were begun in the clinics of the Oakland Health Center, later the Alameda County Institutions' Clinics, to determine the relationship of water to constipation. Patients having constipation were instructed to discontinue the use of enemas, laxatives and cathartics and to take at least two or more glasses of water, either cold or hot, along with their meals, regardless of other fluids taken such as tea, coffee or soup. In obstinate cases they were advised to take an additional glass of water before breakfast. If there was no bowel movement for four or five days they were to take a single enema. All patients had to report at the clinic at least once a week. Of a total of 477 patients, 345 were taking water with their meals but took no laxatives or cathartics and had no constipation. Of these 345 patients 256 had been troubled with constipation and had taken various remedies for that condition. They became well on the discontinuance of medication when they included a sufficient quantity of water with their meals.

American Journal of Hygiene, Baltimore

43:91-194 (March) 1946

Oil Treatment of Bedclothes for Control of Dust-Borne Infection: I. Principles Underlying Development and Use of Satisfactory Oil-in-Water Emulsion. T. T. Puck, O. H. Robertson, H. Wise and others.—p. 91.
Id.: II. Use of Triton Oil Emulsion (T-13) As Routine Laundry Procedure. C. G. Loosli, H. Wise, H. M. Lemon and others.—p. 105.
Study of Effect of Oiled Floors and Bedding on Incidence of Respiratory Disease in New Recruits. Commission on Acute Respiratory Disease and Commission on Air-Borne Infections.—p. 120.
*Chemotherapy of Filariasis Due to Wuchereria Bancrofti with Neostibosan. J. T. Culbertson, H. M. Rose and J. Oliver-Gonzalez.—p. 145.
Important Factors in Epidemiology of Schistosomiasis in Leyte. T. B. Magath and D. R. Mathieson.—p. 152.
Studies on Filariasis: I. Serologic Relationships Between Antigenic Extracts of Wuchereria Bancrofti and Dirofilaria Immitis. Virginia G. Warren, J. Warren and G. W. Hunter.—p. 164.
Human Encephalitis of Western Equine Type in Minnesota in 1941: Clinical and Epidemiologic Study of Serologically Positive Cases. C. M. Ecklund.—p. 171.

Neostibosan in Filariasis.—Culbertson and his associates administered neostibosan to 35 patients with filariasis due to Wuchereria bancrofti, of whom 20 were apparently entirely cured of the infection, as shown by their loss of all microfilariae during the period of observation (five to fifteen months). Ten others lost more than 80 per cent of their circulating microfilariae and appeared likely to lose the remainder within a few additional months. In 5 of the 35 treated persons, administration of the drug failed to influence the infection noticeably. Fifteen untreated controls were all still infected after observation from fourteen to seventeen months. Neostibosan appears to act chiefly on the adult phase of the worm rather than on the embryos in the blood, although once the adults are killed the embryos gradually decline in number. The immediate reactions of patients to neostibosan were slight, consisting chiefly of nausea and vomiting. Usually patients acquired tolerance for the drug within the first several days of its administration. In no case was it necessary to stop the drug because of toxicity. In no patient were symptoms suggestive of elephantiasis induced by chemotherapy.

American J. Obstetrics and Gynecology, St. Louis

51:299-446 (March) 1946. **Partial Index**

Evaluation of Methods for Treatment of Urinary Incontinence. A. H. Aldridge.—p. 299.
General Survey of Vaginal Smear and Its Use in Research and Diagnosis. G. N. Papanicolaou.—p. 316.
Premature Delivery: Causes and Results. Ethel S. Dana.—p. 329.
Ectopic Pregnancy: Selected Data from 110 Cases, Including a Report of 2 Unusual Cases. K. T. MacFarlance and D. W. Sparling.—p. 343.
*Puerperal Infection: Etiologic, Prophylactic and Therapeutic Considerations. R. G. Douglas and I. F. Davis.—p. 352.
Analysis of Obstetric Activities in Hospitals of Cook County During 1944. C. Newberger.—p. 372.
*Studies of Origin and Treatment of Recurrent Trichomonas Vaginitis. E. Allen and S. Butler.—p. 387.
Vinbarbital Sodium for Obstetric Amnesia, Analgesia and Anesthesia. M. S. Lewis.—p. 395.
Pregnandiol Excretion at Onset of Labor. R. Lyon.—p. 403.
Increased Excretion of Pregnandiol in Pregnancy from Diethylstilbestrol, with Special Reference to Prevention of Late Pregnancy Accidents. O. W. Smith, G. Van S. Smith and D. Hurwitz.—p. 411.
Late Complications of Watkins Interposition Operation. C. T. Beecham.—p. 416.
Fetal Mortality in Women During Prediabetic Period. J. Herzstein and H. Dolger.—p. 420.
Unusual Decidual Reaction in Cervix. J. Klein and L. H. Domeier.—p. 423.

Puerperal Infection.—Maternal mortality caused by puerperal infection has not uniformly decreased as much as mortality due to other causes. Douglas and Davis report bacteriologic data from the study of 1,000 patients which indicate that the great majority of infections occurring during the puerperium and postabortal period are endogenous in origin and caused for the most part by different groups of nonhemolytic streptococci. Prophylaxis of infection is far more important than the treatment of the disease once established. Exogenous pyogenic infections may be largely eliminated by the rigid application of a comprehensive technic designed to prevent the inoculation of these organisms from the upper respiratory tract or other source into the genital tract of the patient. Some autogenous infections will develop irrespective of the application of the most rigorous aseptic routine. The incidence of endogenous infections may be decreased by the control and restoration of blood loss, the limitation, better timing and more skilful employment of operative procedures, the judicious use of analgesic agents and other measures. It is the opinion of the authors, based on experience but not proved conclusively, that sulfadiazine, given early during long labors and under certain other circumstances, will decrease the incidence of infection. Sulfadiazine or penicillin given early may be efficacious, while late in the course of disease they may be relatively ineffective.

Recurrent Trichomonas Vaginitis.—Allen and Butler say that zoologic studies establishing the separate identity of Trichomonas vaginalis, Trichomonas buccalis and Trichomonas hominis are not in accord with their clinical impression that attacks of diarrhea are frequently followed by the reappearance of trichomonads in the vagina. Proctoscopy of 33 patients with treatment-resistant Trichomonas vaginitis, with cultures of the material thus obtained, did not reveal any trichomonads in the bowel cultures. Certain visual changes were observed in the rectal mucous membrane of a large percentage of these patients. Six patients with T. hominis intestinalis infestations had no vaginal trichomoniasis. Immediate examination of surgical specimens removed from 28 patients with active Trichomonas vaginitis revealed no organisms above the cervix in direct smear or culture. The treatment in this series of cases consisted in nightly insertion of a tablet of lactobacilli, a morning cleansing douche consisting of 1 drachm of lactic acid to 2 quarts of warm water, followed by the instillation of one applicator full of jelly for daytime use. The lactic acid douche and the lactobacillus tablets have been replaced by ½ drachm of tincture of iodine in 2 quarts of warm water and topical applications of 1 per cent aqueous solution of gentian violet for the treatment of moniliasis.

Jelly has been more effective for yeast infections than for trichomoniasis. Sixty-two of 166 patients were cured by the use of jelly and douches alone. Treatment throughout the menstrual period is essential for cure. The addition of lactobacillus tablets will increase the permanent cures. If reinfection occurs following gradually decreasing therapy, a search is begun for secondary foci of infection. Catheterization of the bladder is done and is repeated several times. If trichomonads are found or petechial bullous edema of the urethra or trigone is present, the bladder and urethra are treated biweekly with instillations of 5 per cent mild protein silver or 5 per cent sodium sulfathiazole. The authors have occasionally added sulfathiazole by mouth in 30 grain (2 Gm.) doses in an attempt to reduce the cocci accompanying trichomonas infestation of the urinary tract. If the investigation of the urinary tract was negative, the male partner was examined and motile trichomonads were found occasionally in the prostatic fluid. The authors feel that T. vaginalis is one of the most important etiologic factors in chronic prostatitis. Some of the most resistant cases of trichomonas vaginitis were cured after the husbands had received adequate treatment.

Anesthesiology, New York

7:113-232 (March) 1946

*Treatment of Acute Arrhythmias During Anesthesia by Intravenous Procaine. C. Burstein.—p. 113.
Blood Transfusion Service Dangers and Safeguards. T. H. Seldon, J. S. Lundy and R. C. Adams.—p. 122.
Frontiers of Anesthesia. M. L. Tainter.—p. 132.
Statistical Systems in Anesthesiology. M. Saklad and Priscilla Sellman.—p. 146.
*Repeated Sympathetic Blocks: Their Limitation and Value. F. L. Faust.—p. 161.
Pressor Activity and Stability of Different Mixtures of Ephedrine and Pituitary (Posterior Lobe) Extract. K. I. Melville.—p. 176.
*New Lethal Dose of Curare, with Observations on Pathology Produced by Large Doses. F. Cole.—p. 190.

Intravenous Procaine for Arrhythmias During Anesthesia.—Burstein injected procaine intravenously in doses of 30 to 70 mg. as a single dose injected into 14 anesthetized patients with acute arrhythmias during intrathoracic operations. No untoward effects on the nervous system, respiration or circulation were observed. The dysrhythmias always improved, often dramatically. Three case reports, 1 with electrocardiographic tracings, are presented. The authors think that general anesthesia probably affords specific protection against the stimulating action of procaine on the central nervous system.

Repeated Sympathetic Blocks.—Faust reviews observations on 40 patients in whom 225 sympathetic blocks were made. This group included patients with arteriosclerosis, a diabetic patient with trophic ulcers and neuritis and patients with thromboangiitis obliterans, acute or chronic thrombophlebitis, postphlebitic edema, posttraumatic dystrophies, epididymitis, chronic fungous infection with lymphedema, chronic leg ulcers and sympatheticalgia. The hypothesis which guided the selection of patients was that in some cases of peripheral vascular disturbances there is also an element of abnormal vasoconstriction and/or vasodilatation which aggravates the circulatory deficiency. Patients with acute thrombophlebitis, epididymitis and chronic leg ulcers showed circulatory improvement and relief of pain after each block. The patients with arteriosclerosis, thromboangiitis obliterans and diabetes showed improvement, which was most noticeable when the blocks were given more frequently. These are the patients who should do well after sympathectomy. In the cases of postphlebitic edema and posttraumatic dystrophies the improvement after repeated blocks was encouraging. The treatment produced improvement in 37 and failed in 3 cases.

New Lethal Dose of Curare: Changes Produced by Large Doses.—Cole found that the anoxic lethal dose of Intocostrin in the dog is 0.065 cc., or 1/15 cc. per pound of body weight. The anoxic lethal dose was not affected by cyclopropane-oxygen anesthesia. A cumulative effect of curare was indicated by the death of 1 dog following the administration of what appeared later to be a sublethal dose. The use of curare on succeeding days may be associated with a heightened effect of the drug. An unidentified anticurare effect was encountered with a technic including tracheal intubation, cyclopropane-oxygen anesthesia, pentothal induction and the administration of the curare with saline solution through rubber tubing. As evidenced by the deaths of 2 dogs, the animal is in a dangerous condition on emergence from deep curarization. There is a nonanoxic lethal dose of curare. Dogs can make complete recoveries, with artificial respiration, after receiving five times the anoxic lethal dose of curare, or 0.33 cc. of Intocostrin per pound of body weight. The lethal dose of Intocostrin in dogs, in the presence of continuous artificial respiration, is about twenty times the anoxic lethal dose, or 1⅓ cc. per pound. Complete recovery was made in one experiment following the administration of 1 cc. of Intocostrin per pound (fifteen times the anoxic lethal dose); artificial respiration was maintained for eighteen hours. A temporary cyanosis was present following the administration of large doses of curare in the presence of proper artificial respiration. Slowing of the pulse rate occurred whenever artificial respiration was stopped. Bronchiolar or intercostal spasm is suggested immediately following the injection of large doses of curare by the greater amount of force required to raise the chest wall during artificial respiration. No brain damage could be found (other than that due to anoxia) attributable to large doses of curare. Bloody diarrhea occurred with large doses, and necropsy revealed mucosal hemorrhages throughout the intestinal tract. There may be a relative contraindication to large doses of curare when there is disease of the intestinal tract. Neostigmine does not appear to be a perfect neutralizing agent for large doses of curare. The safest method of terminating the effects of a large dose is continuous artificial respiration until recovery.

Annals of Internal Medicine, Lancaster, Pa.

24:343-588 (March) 1946

*Penicillin Treatment of Empyema: Report of 24 Cases and Review of Literature. B. Brown, E. M. Ory, M. Meads and M. Finland.—p. 343.
Quinidine in Treatment of Auricular Fibrillation in Association with Congestive Failure. J. M. Askey.—p. 371.
Blastomycosis: Brief Review of Literature and Report of Case Involving the Meninges. L. L. Friedman and J. J. Signorelli.—p. 385.
Clinical and Roentgenologic Diagnosis of Pericardial Effusion. N. M. Fenichel and B. S. Epstein.—p. 401.
*Studies on Sensitivity of Diphtheria to Penicillin. R. Paull, S. N. Tucker, B. L. Holladay and C. R. Nicewonger.—p. 413.
Periarteritis Nodosa: Clinicopathologic Analysis of 7 Cases. R. S. Diaz-Rivera and A. J. Miller.—p. 420.
Analysis of Complications Encountered During Therapeutic Malaria. H. S. Read, L. I. Kaplan and F. T. Becker.—p. 444.
*Response of Cirrhosis of Liver to Intensive Combined Therapy. L. M. Morrison.—p. 465.

Penicillin Treatment of Empyema.—Brown and his co-workers report 24 cases of empyema that were treated with penicillin at the Boston City Hospital and analyze 237 additional cases collected from the literature. The general condition of patients with empyema improved greatly after treatment with penicillin and aspirations was started. Those with putrid empyema were probably much better operative risks as a result of preparation with this form of therapy. In the favorable cases, sterilization of the empyema fluid was usually accomplished and the volume which could be aspirated diminished appreciably after three intrapleural instillations or less. The changes in the fluid following therapy, however, were not uniform and could not always be relied on as a guide for further therapy or as an indication for operation. The foul odor of the putrid empyema cleared promptly after penicillin therapy was started. In cases of empyema that were cured by aspirations and penicillin alone, the hospital course and convalescence were considerably shorter than in those in which operative drainage was employed. In evaluating the cases reported in the literature the authors stress that it should be borne in mind that some of them were treated when the supply of penicillin was limited and it was of poorer quality than the products now available.

Sensitivity of Diphtheria to Penicillin.—Paull and his associates say that in August 1944 there was a sudden rise in the number of admissions of diphtheria cases to Letterman General Hospital from ships' hospitals and U. S. Army transports. Since the use of diphtheria antitoxin in appropriate doses, administered early, was giving such highly satisfactory results in control of the clinical, symptomatic diphtheria, this method of treatment was continued during the stage of subjective illness. In an attempt to reduce the duration of the carrier

state, however, the use of penicillin was considered. A carrier was regarded to be a person who ten days after onset of illness continued to have positive nasopharyngeal smears and cultures. A penicillin solution of 2,000 units per cubic centimeter of 10 per cent glycerin in isotonic solution of sodium chloride was adopted. This solution was nebulized by an ear, nose and throat unit, using air as a source of pressure in such an amount as would in fifteen minutes nebulize 2.5 cc. of the penicillin solution or 5,000 units of penicillin sodium. The first series of virulent diphtheria bacillus carriers treated with nebulized penicillin received four fifteen minute treatments daily. The results indicated that penicillin so used was of no benefit in reducing the interval of carrier state. Orally inhaled and nasally exhaled nebulized penicillin of the same concentration, using 100 per cent oxygen instead of air as the nebulizing gas, likewise failed to reduce the duration of carrier state. Nebulization of penicillin sodium 50,000 units per cubic centimeter into the nasal chamber was found nonirritating. In vitro tests indicate that some strains of diphtheria are penicillin sensitive, whereas others are penicillin tolerant. Forty-one of 64 cultures taken were penicillin sensitive.

Therapy in Cirrhosis of Liver.—Morrison deals with the results obtained from using various therapeutic combinations in the treatment of cirrhosis of the liver, or chronic hepatitis, in a series of 62 patients studied from 1938 to 1945. The series was divided into three groups each treated for two years over an eight year period. One group of 23 patients was treated only by such methods as were in use in 1938, that is, by paracentesis, diuresis, high carbohydrate diet and palliative therapy; this group contained 11 cases without ascites and 12 cases with ascites and was called the "untreated" control group. A second group of 19 cases was treated by a modified "Patek" regimen consisting of a nutritious high protein, moderate carbohydrate, low fat diet, liver extract injections and vitamin B complex therapy. This group contained 9 patients without ascites and 10 patients with ascites. A third group of 20 patients was treated intensively with a combined therapy which consisted of a maximum protein (three meat servings daily plus skim milk), high carbohydrate, low fat diet, daily injections of 5 cc. of a "whole" liver extract, highly potent injections of vitamin B complex, daily oral vitamin B complex and multiple (total) vitamin capsules orally, together with 2 Gm. each of methionine and choline daily. This consisted of 11 patients without ascites and 9 with ascites. Treatment with the intensive combined method resulted in reducing the mortality rate in the compensated group (without ascites) over a two year period of time to 0 (1943-45) as compared with 27 per cent mortality in the control group (1938-40). The intensive combined therapy in the group with ascites reduced the mortality rate from 75 per cent in the control group (1938-40) to 11 per cent in the treated group (1943-45). Treatment with the intensive combined therapy resulted in a sharp reduction in the length of the disability period from 82 per cent (1938-40) to 28 per cent (1943-45) in the groups without ascites and from 83 per cent (1938-40) to 66 per cent (1943-45) in the groups with ascites. The intensive combined method of therapy resulted in a remission of all signs and symptoms in 64 per cent of cases of the group without ascites, as compared with remissions in only 10 per cent of cases in the control group; in the group with ascites remission occurred in 34 per cent of cases as compared with none in the corresponding control group.

Archives of Otolaryngology, Chicago

43:199-314 (March) 1946

*Tympanosympathectomy: Surgical Technic for Relief of Tinnitus Aurium. J. Lempert.—p. 199.
Otitis Externa: Clinical Observations and Microbiologic Flora. J. T. Syverton, W. R. Hess and J. Krafchuk.—p. 213.
Study of Chronic Suppurative Otitis Media at Pennsylvania School for the Deaf. W. J. Hitschler and Mary Frances Vastine.—p. 226.
Study of Attitudinal Reflexes of Magnus and deKleijn in Thalamic Man. H. O'Neill.—p. 243.
Planning the Rhinoplasty. S. Cohen.—p. 283.
Review of 100 Cases of Acute Aero-Otitis. J. Lentine.—p. 293.

Tympanosympathectomy for Tinnitus Aurium.—Lempert suggests that tinnitus aurium in many cases may be due to a tonus impulse transmitted to the inner ear by diseased sympathetic ganglion cells of the tympanic plexus. Based on this new theory, tympanosympathectomy is recommended for the relief of tinnitus aurium. In this operation the outer membranous third of the external auditory canal is widened to permit the introduction of the widest possible ear speculum, through which the tympanic cavity will be made readily accessible to surgical intervention. Then the lower half of the annulus fibrosus of the tympanic membrance is disengaged from the corresponding portion of the sulcus tympanicus, and the disengaged lower half of the tympanic membrane is everted in order to expose to view the tympanic plexus. After the tympanic plexus has been excised, the disengaged portion of the annulus fibrosus of the tympanic membrane is reinserted into its normal position within the sulcus tympanicus. Of 15 patients on whom tympanosympathectomy was performed, 10 are now completely free from tinnitus. Patients submitted to this surgical treatment should be those who complain of severe, continuous and persistent tinnitus of at least one year's duration.

Archives of Physical Medicine, Chicago

27:133-192 (March) 1946

Effects of Massage on Denervated Skeletal Muscle. Mitzi I. Suskind, Norma M. Hajek and H. M. Hines.—p. 133.
Adaptability of Present Day Concepts of Convalescent Training and Physical Rehabilitation to Civilian Practice of Medicine. F. A. Hellebrandt.—p. 136.
Challenge of Crutches: V. Daily Activities on Crutches. G. G. Deaver and Mary Eleanor Brown.—p. 141.
Cervical Periarthritis: Diagnosis and Treatment. W. J. Zeiter and F. B. House.—p. 162.

27:193-256 (April) 1946

Physical Medicine in Surgical Convalescence. R. Elman.—p. 197.
Expanding Field of Physical Medicine. F. H. Krusen.—p. 201.
Studies on Neuromuscular Dysfunction: V. Neostigmine Therapy of Acute and Chronic Backache. H. Kabat and C. W. Jones.—p. 208.
Treatment of Sciatica with Alternating Current. A. Cohen, F. P. Naselli and Marie P. Craig.—p. 219.
Penicillin Combined with Fever Therapy: Preliminary Report of 20 Cases of Early Syphilis. R. H. Craig, G. X. Schwemlein and H. W. Kendell.—p. 222.

Arkansas Medical Society Journal, Fort Smith

42:95-218 (March) 1946

Cutaneous Blastomycosis. R. H. Rigdon and C. H. Winkler Jr.—p. 95.

42:219-238 (April) 1946

Modern Concepts of Cardiovascular Disease: Digitalis Intoxication. C. T. Chamberlain.—p. 219.
Diaphragmatic Hernia: Report of Case. J. H. Hayes.—p. 221.

Cancer Research, Baltimore

6:161-224 (April) 1946. **Partial Index**

Factors Affecting Carcinogenesis: III. Effect of Hydrogenation of Lipid Solvents on Carcinogenesis by 3,4-Benzpyrene. F. Dickens and H. Weil-Malherbe.—p. 161.
Id.: IV. Effect of Tricaprylin Solutions of Cholesterol and Phospholipins. H. Weil-Malherbe and F. Dickens.—p. 171.
Influence of Age on Total Epidermal Lipid During Carcinogenesis Induced by Methylcholanthrene in Mice. V. Suntzeff, E. V. Cowdry and C. Carruthers.—p. 179.
Action of Methylcholanthrene on Certain Scars of Skin in Mice. A. Lacassagne and R. Latarjet.—p. 183.
Filtrable Agent Producing Lymphoid Tumors and Osteopetrosis in Chickens. B. R. Burmester, C. O. Prickett and T. C. Belding.—p. 189.

Delaware State Medical Journal, Wilmington

18:51-66 (March) 1946

Early Determination of Gallbladder Disease and Its Treatment. W. Bates and D. C. Emenhiser.—p. 51.
Problems of Rehabilitation in Patients with Cerebral Palsy. T. Fay.—p. 57.
*Healed Dissecting Aneurysm of Aorta, with Signs of Aortic Insufficiency: Case Report. J. R. Durham.—p. 60.

Healed Dissecting Aneurysm of Aorta with Signs of Aortic Insufficiency.—A man aged 68, who had presented symptoms that led to the provisional diagnosis of rheumatic aortic insufficiency, complete heart block and possible digitalis intoxication, died and a postmortem revealed a transverse split in the aorta 2 cm. wide and 2 deep 0.8 cm. above the aortic valve ring. The split involved the intima, and this layer of the aorta formed a valvelike semilunar flap which projected into the lumen of the vessel. The mechanism of regurgitation was caused by the lip of the aneurysm interfering with closure

of the aortic valves. The blood column in the aorta following systole would easily project the lip of the sac into the lumen of the valve ring. It is surprising that the aorta showed no degenerative or inflammatory lesions other than the sac. It is possible that dynamic aortic dilatation may have been a factor in addition to the mechanical interference with valve function. The onset of the intimal tear may have occurred five years prior to the present illness, at which time the patient was seized with severe chest pain while chopping wood. Durham stresses that this etiologic possibility should be considered in aortic insufficiency of nonsyphilitic and nonrheumatic origin.

Illinois Medical Journal, Chicago

89:101-148 (March) 1946

Acute Surgical Thrombotic Emergencies. J. E. Bellas.—p. 116.
Thrombocytopenic Purpura Following Angina: Report of Fatal Case with Autopsy. K. M. Carroll.—p. 121.
Allergic Iritis. L. Bothman.—p. 124.
Urologic Neurosis and Psychoses. C. O. Ritch.—p. 131.
Therapeutic Technics Used with Special Group of Disturbed Children. E. Angres.—p. 133.

Industrial Medicine, Chicago

15:179-242 (March) 1946

Comprehensive Mental Hygiene Program at Caterpillar Tractor Company: Improving Human Relationships in Industry. H. A. Vonachen, B. Mittelmann, M. H. Kronenberg and others.—p. 179.
Prevention of Oral Diseases of Occupational Origin. L. D. Heacock.—p. 184.
Relationships Between the Industrial Physician and Community Practitioner. C. Leggo.—p. 187.
The Physically Impaired Worker in Industry. R. L. Brown and R. L. C. Butsch.—p. 188.
Industry and Medicine: What Each Expects of the Other. H. Strong.—p. 194.
Inflammatory Phlebostenosis as Factor in Localization of Rheumatic Diseases. O. Meyer.—p. 197.

Journal of Lab. and Clinical Medicine, St. Louis

31:261-380 (March) 1946

*Protein Requirements of Adults. D. M. Hegsted, A. G. Tsongas, D. B. Abbott and F. J. Stare.—p. 261.
Plasma Protein Levels in Normal Individuals. D. F. Milam.—p. 285.
*Treatment of Bacterial Endocarditis with Penicillin. R. J. Glaser, R. O. Smith, C. G. Harford and W. B. Wood Jr.—p. 291.
Maintenance of Therapeutic Blood Concentrations of Penicillin for Twenty-Four Hours Following Single Injections of Penicillin-Beeswax-Peanut Oil Mixtures. W. M. M. Kirby, S. P. Martin, W. Leifer and J. M. Kinsman.—p. 313.
Concentration of Penicillin in Spinal Fluid Following Intramuscular Administration in Neurosyphilis: Negative Report. L. I. Kaplan, H. S. Read, F. T. Becker and C. F. Seymour.—p. 317.
*Plague: Treatment of Experimental Animals with Streptomycin, Sulfadiazine and Sulfapyrazine. N. E. Wayson and Margaret C. McMahon.—p. 323.
Effect of Gold Chloride on Plasma Ascorbic Acid in Rat. R. L. Zwemer and H. Elftman.—p. 333.
Further Studies on Antibacterial Action of 3',5'-Dibromosulfanilanilide. G. R. Goetchius and C. A. Lawrence.—p. 336.
Application of "Lyophile Technic" to Biologic Products: I. Sera, Antisera and Antibody Globulins. P. Masucci.—p. 340.

Protein Requirements of Adults.—Hegsted and his associates studied the nitrogen balance in 26 adults who were fed diets low in protein and devoid of animal protein and investigated the effect of replacing part of the protein in the diet by meat, soy flour, wheat germ and white bread. As a result they consider it most unlikely that protein deficiency will develop in apparently healthy adults on a diet in which cereals and vegetables supply adequate calories. The National Research Council's daily recommended allowance of 70 Gm. of protein for an adult weighing 70 Kg. is most generous and could, if necessary, be reduced to 50 Gm. and still provide approximately 30 per cent margin above requirement. These experimental data apply only to adults in good health and do not consider protein requirements in growth, pregnancy, lactation or disease.

Penicillin in Bacterial Endocarditis.—Glaser and his associates present the results of penicillin treatment of 28 patients with bacterial endocarditis. All patients with adequate clinical and laboratory evidence of bacterial endocarditis were included regardless of the patient's condition at the time of admission to the hospital. Intermittent and continuous methods were used either intravenously or intramuscularly on various occasions. The usual procedure was the intramuscular injection of 40,000 units every two hours day and night. The use of a continuous intramuscular drip was abandoned because of reactions. Twenty-two of the patients had streptococcic and 6 had staphylococcic infections. Of the 22, 13 are living and well, 1 is living, but the infection has not been arrested and 8 have died. Five of these 8 fatalities occurred before the completion of the penicillin therapy, and of the 3 others 2 were due to congestive heart failure and in the third the organism was resistant to penicillin. Resistance to penicillin was observed also in the patient who survived without arrest of infection. In the 6 cases of staphylococcic endocarditis results were excellent. Only 1 of these patients died, and this death was due to rupture of a brain abscess. The authors emphasize the importance of prompt, intensive and prolonged chemotherapy. Relapse occurred in 2 patients after completion of a first course, but both patients responded to a prolonged second course.

Streptomycin, Sulfadiazine and Sulfapyrazine in Experimental Plague.—Wayson and McMahon inoculated 334 white mice with plague. One half of these were treated in groups with different amounts and varying dosage of either streptomycin, sulfadiazine or sulfapyrazine. The other half were used as controls. From 16 to 18 animals survived among each lot of from 18 to 20, while all the corresponding controls died with plague. Forty-eight guinea pigs were likewise inoculated, and half were treated with streptomycin in two groups after clinical evidence of infection had developed. All survived, but 8 had residual buboes at necropsy. Twenty-three controls died with plague. One hundred and six guinea pigs were infected through flea transmission. After the disease was evident clinically, 15 were treated with streptomycin and 14 survived; 15 received sulfadiazine and 14 survived; 10 received both these drugs and all survived; 16 received sulfapyrazine and 10 survived. Six among all the survivors had residual buboes at necropsy. Three survived among 50 controls divided among the four lots treated. Clinical recurrences appeared frequently under the treatment schedules used with streptomycin and sulfapyrazine but not with that of sulfadiazine.

Journal of Pharmacology & Exper. Therap., Baltimore

86:205-310 (March) 1946. **Partial Index**

Certain Peripheral and Central Nervous System Effects of β-Diethylaminoethyl Phenyl-α-Thienylglycolate HCl and Pharmacologically Related Compounds. B. E. Abreu and Elizabeth Troescher-Elam.—p. 205.
Studies on Pharmacology of DDT (2,2 Bis-(Parachlorphenyl)-1, 1,1 Trichloroethane). F. S. Philips and A. Gilman.—p. 213.
*Antihistamine Properties of Benadryl, β-Dimethylaminoethyl Benzhydryl Ether Hydrochloride. E. R. Loew, R. MacMillan and Margaret E. Kaiser.—p. 229.
Studies on Fate of Nicotine in Body: IV. Observations on Chemical Structure of End Product of Nicotine Metabolism. P. S. Larson, H. B. Haag and J. K. Finnegan.—p. 239.
Effects of Morphine and Its Derivatives on Intermediary Metabolism: IV. Influence of Chronic Morphine and Heroin Poisoning on Oxygen Consumption of Dog, Rat and Mouse Skeletal Muscle. F. E. Shideman.—p. 242.
Elimination of G-Strophanthin by Rat. A. Farah.—p. 248.
Absorption of Sulfonamides in Mice. F. L. Rose and A. Spinks.—p. 264.
Antimalarial Action in Ducks of Certain Sulfanilamide Derivatives. E. K. Marshall Jr., J. T. Litchfield Jr. and H. J. White.—p. 273.
Acute Toxicity of Vasopressor Amines. M. R. Warren and H. W. Werner.—p. 280.
Relation of Absorbability to Comparative Toxicity of DDT for Insects and Mammals. J. M. Tobias, J. J. Kollros and J. Savit.—p. 287.
Rate of Disappearance of a Marihuana-Active Substance from Circulating Blood. S. Loewe.—p. 294.
Behavior of Synthetic Esters of Strophanthidin, the Acetate, Propionate, Butyrate and Benzoate, in Man. H. Gold, H. L. Otto, W. Modell and S. L. Halpern.—p. 301.

Antihistamine Properties of Benadryl.—Loew and his associates conducted experiments to determine whether Benadryl, β-dimethylaminoethyl benzhydryl ether hydrochloride, antagonizes diverse actions of histamine on several tissues, viz. stimulation of secretory cells, relaxation of vascular smooth muscle and contraction of intestinal smooth muscle. It was deemed important to determine whether Benadryl antagonizes histamine in a specific manner or whether the effects of other depressor and/or spasmogenic agents such as acetylcholine and barium are altered. 1. A dilution of 1:50,000,000 proved effective in antagonizing the spasmogenic effects of histamine

on intestinal muscle, whereas much larger doses were required to antagonize the effects of acetylcholine and barium. Benadryl possesses a degree of specificity against histamine which approaches the specificity of atropine against acetylcholine. In view of weak antagonism of barium, the term antihistamine compound describes Benadryl more specifically than the use of the generic term musculotropic antispasmodic. 2. Secretion from denervated gastric pouches in dogs following stimulation with histamine was reduced approximately 40 per cent by pretreatment with Benadryl. Evidence of inconsistency in results and lack of a pronounced inhibitory effect reduces the probability that a direct antagonism of the secretagogue action of histamine was involved. 3. Depressor effects of small doses of histamine and acetylcholine were decreased by intravenous administration of Benadryl in dogs. The possibility exists, therefore, that the relaxing effect of histamine on vascular smooth muscle was antagonized, as well as the contracting effect as demonstrated on intestinal muscle. 4. Adequate doses of Benadryl augmented the pressor response to epinephrine. There was no evidence of epinephrine reversal, which has been demonstrated with several other synthetic drugs which possess some degree of antihistamine action.

Michigan State Medical Society Journal, Lansing

45:265-416 (March) 1946

Anal Cryptitis: Its Relation to Focal Infection, Fissure and Fistula. W. W. Flora.—p. 333.
Pneumococcic Meningitis Following Head Injuries. M. Cooperstock. —p. 337.
Diagnosis and Treatment of Meningitis. J. S. Fine and F. H. Top. —p. 340.
Epidemiology of Tinea Capitis in Detroit School Children. L. Carrick. —p. 347.
Effects of Small Doses of Penicillin Administered to Patients with Undiagnosed Early Syphilis: Report of 3 Cases. T. H. Miller. —p. 353.
Tidal Irrigation Following Gynecologic Operations. H. H. Cummings and R. K. Ratliff.—p. 356.

Minnesota Medicine, St. Paul

29:193-296 (March) 1946

Factors in Rural Health in Minnesota. E. J. Simons.—p. 225.
Tropical Disease Hazards in Northwest. R. W. Backus.—p. 227.
Facial Injuries. J. A. Hilger.—p. 235.
The Rh Factor. K. Ikeda, E. M. Kasper and R. Rosenthal.—p. 240.
Treatment of Acute Arterial Occlusion of Extremities, with Special Reference to Anticoagulant Therapy. N. W. Barker, E. A. Hines Jr. and W. F. Kvale.—p. 250.

29:297-392 (April) 1946

Cholecystectomy: Its Origin and Present Status. J. Ohage.—p. 313.
Acute Lesions of Abdomen: Diagnosis and Treatment. A. S. Jackson. —p. 317.
Use of Myristyl-Gamma-Picolinium Chloride in Surgery. A. Schwyzer. —p. 321.
Tuberculous Pericarditis: Incidence at Glen Lake Sanatorium. E. Fenger and Olga S. Hansen.—p. 326.
Acceleration of Bone Production by Use of Ground Bone. L. J. Hoyer.—p. 328.
Gallstone Ileus: Report of Case. C. B. Drake.—p. 330.
Malignant Tumors of Kidney. A. N. Collins.—p. 332.

New England Journal of Medicine, Boston

234:357-392 (March 14) 1946

Trauma of Lower Urinary Tract: Roentgenologic Study. H. S. Weens, J. H. Newman and T. J. Florence.—p. 357.
Recurrent Meningococcal Meningitis: Report of Case. L. Weinstein and Edith D. Stanley.—p. 364.
*Dangers of Modern Insulin Syringes. W. S. Collens, L. C. Boas and J. D. Zilinsky.—p. 367.
Arteriovenous Aneurysm of Great Vessels of Neck: Report of Case. P. L. Boyd.—p. 370.
Syphilis. G. M. Crawford.—p. 372.
Subacute Glomerulonephritis.—p. 379.
Adenocarcinoma of Lung, Pulmonary Infarcts.—p. 383.

Dangers of Modern Insulin Syringes.—Collens and his associates point out that the original introduction of a variety of insulin concentrations necessitated the construction of hypodermic syringes with different calibrations corresponding to these various concentrations. Apparently, in an attempt at economy, syringes with double graduations were manufactured. The dual calibrations confuse the majority of diabetic patients and present a serious obstacle to the successful administration of the dose of insulin planned by the physician. This problem has been further complicated by the introduction of modified forms of insulin, such as protamine zinc insulin, zinc insulin crystals and globin insulin. The introduction of a new technic for administering insulin mixtures has still further aggravated the problem. The authors make recommendations for the manufacture of syringes with simplified graduations to eliminate the possibility of error in dosage.

New Jersey Medical Society Journal, Trenton

43:77-122 (March) 1946

Mental Hygiene Problems of the Aged. E. Frankel.—p. 79.
Modern Treatment of Peptic Ulcer. J. Gerendasy.—p. 84.
Early Treatment of Hay Fever in Infancy. J. London.—p. 86.
Differential Diagnosis of Sulfa Drug Reactions. H. C. Goldberg. —p. 87.
Chemotherapy in Management of Leukorrheas. Anne Horoschak and S. Horoschak.—p. 92.
Dermatitis Venenata of Eyes and Eyelids from Local Use of Penicillin. E. M. Satulsky.—p. 95.
Hygiene of Anus and Rectum. J. Gerendasy.—p. 97.

43:123-166 (April) 1946

*Sublingual Administration of Penicillin. J. T. Hanan.—p. 127.
Cough in Tuberculosis. C. Hyman.—p. 128.
Shock Therapy at Essex County Hospital. H. G. Smith.—p. 130.
The Wart and Its Treatment. A. J. Delario.—p. 134.
Masking of Mastoiditis Symptoms by Penicillin. A. S. Wilner.—p. 140.
Treatment of Amebiasis. J. Gerendasy.—p. 141.
Asymptomatic Congenital Diaphragmatic Hernia: Case Report. O. Glass.—p. 143.

Sublingual Administration of Penicillin.—Hanan directs attention to the availability of the sublingual space for quick absorption into the blood stream of penicillin sodium in solution by way of the ranine veins under the tongue. He has been using this area to promote a rapid blood level of penicillin when oral medication was indicated. Systemic absorption from the sublingual space nearly equals that from a subcutaneous injection. The basic formula is 100,000 units of penicillin sodium, 5 cc. of isotonic solution of sodium chloride and one drop of spirit of peppermint. Ten drops are placed under the tongue every hour or two. This gives forty doses of 10,000 units each. Results by this route have been prompt, uncomplicated and curative.

Radiology, Syracuse, N. Y.

46:213-318 (March) 1946

Roentgenographic Signs of Herniation of Cervical Intervertebral Disk. J. E. Whiteleather, R. E. Semmes and F. Murphey.—p. 213.
Roentgenographic Observations in Age Atrophy and Osteoporosis of Spine. G. J. Marum.—p. 220.
Reflex Hyperemic Deossifications Regional to Joints of Extremities. A. A. de Lorimier, W. L. Minear and H. B. Boyd.—p. 227.
Nondisabling Bronchiectasis. A. Fine and T. B. Steinhausen.—p. 237.
Roentgenograms of Chest in Mental Deficiency. J. T. Danzer.—p. 244.
Roentgenographic Appearance of Temporomandibular Hydrarthrosis. A. L. Bachman and A. L. Bershon.—p. 251.
Transient Successive Pulmonary Infiltrations (Löffler's Syndrome). M. Eichwald and W. V. Singletary.—p. 258.
Unusual Bone Lesions in Infant, Probably Osteitis Tuberculosa Multiplex Cystoides. F. Y. Khoo and Y. Yang.—p. 263.
Congenital Absence of Odontoid Process: Report of Case. J. McK. Ivie.—p. 268.
Congenital Absence of Septum Pellucidum Associated with Internal Hydrocephalus. W. P. Savain.—p. 270.
March Fracture of Articular Surface of Tibia and Its Relation to Osteoarthropathy. J. Levitin.—p. 273.
Fatigue Fracture of Metatarsal: Report of Case. W. E. Allen Jr. —p. 276.
Cancer of Skin: Statistical Report. H. J. Ullmann.—p. 279.

Western J. Surg., Obst. & Gynecology, Portland, Ore.

54:127-176 (April) 1946

Present Trends in Practice of Medicine and Surgery: Presidential Address. P. K. Gilman.—p. 127.
Spinal Cord "Concussion" in War Wounds. W. K. Livingston and H. W. Newman.—p. 131.
Involuntary Movements Following Nerve Injuries by High Velocity Projectiles. W. K. Livingston and H. W. Newman.—p. 140.
Moore-Blount Internal Fixation of Intertrochanteric Fracture of Femur in an 89 Year Old Woman. R. R. De Nicola.—p. 145.
Clinical Use of Prostigmine as Ideal Office Procedure in Determining Pregnancy. A. L. Natenshon.—p. 149.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Radiology, London

19:133-172 (April) 1946

Dosage Control in Interstitial Radium Therapy: Symposium. B. W. Windeyer, J. R. Nuttal, F. W. Spiers and others.—p. 133.
*Chronic Ulcerative Esophatitis with Report of Case of Ulcer in Esophageal Varices. G. Steiner.—p. 145.
Stereoscopic Screening. J. A. Ross.—p. 156.
Investigation into Radiologic Appearances of Chests of Workers Engaged in Production of Toxic Gases. P. H. Whitaker.—p. 158.
*Graphite Pneumonoconiosis Complicated by Cavitation Due to Necrosis. L. Dunner and J. T. Bagnall.—p. 165.
Tactics and Technic for Urography. H. Hellmer.—p. 169.

Chronic Ulcerative Esophageal Varices.—Steiner presents several cases of chronic ulcerative esophageal varices and describes the radiologic signs with particular regard to the mucosal relief both in the case of an actual crater and in the predominantly inflammatory form. As in other parts of the alimentary tract, a sudden break in the mucosal pattern does not necessarily indicate neoplastic infiltration. Narrowing of the lumen may be due to mucosal swelling without spasm or stenosis of the muscular coat. Dilatation may result from hypotonicity alone. Absence of direct ulcer signs should not deter the radiologist from diagnosing chronic esophagitis, provided the alteration in the mucosal relief is constant and can be differentiated from early neoplasm.

Graphite Pneumonoconiosis with Cavitation.—Dunner and Bagnall describe the first case of a lung cavity due to necrosis in a worker aged 64 who had been working with graphite for seventeen years. In 1939 he was pronounced tuberculous and sent to a sanatorium. His sputum was always free from tubercle bacilli. After discharge he did not return to work with graphite but was able to do light work for six years. In 1944, when first seen by the authors, radiologic aspects of his chest were unchanged, when compared with those of films taken in and since 1939, and showed massive opacity in the right upper zone, similar, but fainter opacity in the left upper zone, and a rounded opacity the size of a golf ball, superimposed on the lower part of the left root shadow. In April 1945 he suddenly brought up large amounts of black material. Samples of the undried sputum contained about 0.07 per cent of carbon, the size of the majority of the particles being 5 microns or less, with only a few over 10 microns. No silica was detected.

British Medical Journal, London

1:423-460 (March 23) 1946

Health Problem in Berlin (July 1945 to January 1946). P. G. Horsburgh and H. A. Raeburn.—p. 423.
Nutrition of School Children in Leeds, Winter 1943 and Summer 1944. F. W. Chattaway, F. C. Happold and A. Margaret Happold.—p. 429.
Unusual Gunshot Wound of Internal Carotid Artery. S. L. Schwarzwald.—p. 431.
Congenital Malaria. A. Eckstein and W. C. W. Nixon.—p. 432.
Hypertension in Ruptured Kidney. D. C. Corry.—p. 433.

Edinburgh Medical Journal

53:97-144 (March) 1946

Management in Prostatic Surgery, with Special Reference to Operative Risk. R. L. Stewart.—p. 97.
Assessment of Sensory Denervation After Injuries of Peripheral Nerves. R. L. Richards.—p. 110.
*Postprandial Variation in Hemoglobin. A. W. Branwood.—p. 125.
Hemolytic Streptococci in Puerperal Sepsis. J. Dick.—p. 134.

Postprandial Variation in Hemoglobin.—Branwood shows that the percentage of hemoglobin in the peripheral blood is not constant throughout the day. There is usually a postprandial fall in hemoglobin of the order of 5 to 10 per cent. This fall is in proportion to the size of the meal—the larger the meal the greater the fall. There is also, presumably, a fall in the number of erythrocytes at this time. It will be obvious that when periodic hemoglobin values are required they should not be estimated within three hours following a large meal or should be estimated at the same time of day. This decrease in hemoglobin is probably due to a redistribution of the cells from the periphery to the abdominal viscera and possibly also to slight changes in blood volume. This fall in hemoglobin can be prevented by exercise or by the administration of epinephrine. Cases of hypertension and hyperthyroidism do not share this postprandial decrease in hemoglobin.

Irish Journal of Medical Science, Dublin

243:73-108 (March) 1946

*Copper Sulfate Method in Routine Hematologic Examinations. M. H. O'Connor.—p. 73.
Surgical Treatment of Deafness. I. S. Hall.—p. 80.
Two Stage Treatment of Soft Tissue Injuries. H. Donough O'Brien.—p. 85.
Fracture Dislocation of Mandible. H. S. Meade.—p. 98.
Calcification of Placenta. E. Solomons and N. McI. Falkiner.—p. 99.
Uses of Amnioplastin. S. J. MacHale.—p. 101.

Copper Sulfate Method in Routine Hematologic Examinations.—O'Connor suggests that the copper sulfate method accompanied with centrifugalization of blood in a hematocrit tube is a satisfactory approach to a hematologic study of blood. Unless there is some otherwise special indication, bloods submitted to and found normal by this method need not be further examined. The method immediately draws attention to a pathologic blood and, supplemented by a calculation of the specific gravity of the cells, may help to distinguish anemias classified as hypochromic. With further study the method may distinguish hyperchromic anemias and possibly normochromic, normocytic anemias and mixed anemias.

Journal of Pathology and Bacteriology, Edinburgh

58:1-156 (Jan.) 1946

*Acceleration of Healing by Pressure Application to Experimental Thermal Burns. G. R. Cameron, J. W. Allen, R. F. G. Coles and J. P. Rutland.—p. 1.
Hemolysin Tests for Rapid Identification of Clostridium Oedematiens and Clostridium Septicum. Nancy J. Hayward and J. A. B. Gray.—p. 11.
Notes on Weil-Felix Reactions in Typhus Fever and Other Diseases. J. C. Dick.—p. 21.
Isolation of Organisms of Pleuropneumonia Group from Genital Tract of Men and Women. M. H. Salaman and collaborators.—p. 31.
Influence of Surface Active Substances on Growth of Acid Fast Bacteria. A. E. Alexander and M. A. Soltys.—p. 37.
Neutralization of Corynebacterium Diphtheriae Type Toxins with Standard Antitoxin, as Determined by Skin Reactions in Guinea Pigs. K. Zinnemann.—p. 43.
Histologic and Bacteriologic Study of Healing Burns, with Inquiry into Significance of Local Infection. J. Gordon, R. A. Hall, R. M. Heggie and E. A. Horne.—p. 51.
Experimental Study of Healing of Wounds, with Special Reference to Action of Heart Extract Powder (Doljanski). J. S. Young, A. H. Cruickshank and W. J. Martin.—p. 63.
Diffusion of Antiseptics Through Agar Gels, with Special Reference to Agar Cup Assay Method of Estimating Activity of Penicillin. K. E. Cooper and D. Woodman.—p. 75.

Healing of Thermal Burns.—Cameron and his associates produced thermal burns in anesthetized goats by immersing the right forelimb for two and one-half minutes in water kept at a steady temperature of 86 C. The area of burning involved approximately 5 per cent of the total body surface. Quick setting cellulose and plaster of paris bandages were closely wrapped around the burnt limb within a few minutes of burning. A layer of dry sterile gauze separated the plaster from the skin. The bandages were kept on for thirty days. In a second series pressure treatment was initiated at once but the plaster bandage was removed at varying intervals after burning. In a third series pressure treatment was commenced two or four hours after burning and maintained for nineteen days. In a fourth series goats with standard burns were treated with local applications of penicillin cream and an ointment containing sulfathiazole, zinc oxide and amyl salicylate protected with sterile gauze but no pressure bandage. The prompt application of pressure bandages to thermal burns of the extremities of goats accelerated the rate of healing and greatly reduced the mean healing time. Pressure interferes with effusion of plasma and the formation of fibrin at the burn site. It reduced the severity of edema, decreased the amount of reparative tissue and probably lessened the chance of local infection. Pressure should be applied as soon as possible after burning to get the best results. A delay of four hours seemed to be the limit for beneficial effects. There is no need to maintain pressure application for much longer than a week, for there was little difference in mean healing times for standard burns treated with pressure for nine, sixteen or thirty days. Removal of pressure

bandages during a critical phase lasting for several days after burning was followed by severe edema of the burned area and delay in healing. Healing of burns treated by the local application of penicillin cream or the ointment was less favorable.

Lancet, London

1:447-484 (March 30) 1946

Thrombosis: Early Diagnosis and Abortive Treatment with Heparin. G. Bauer.—p. 447.
Effect of pH of Medium on Activity of Streptomycin and Penicillin and Other Chemotherapeutic Substances. E. P. Abraham and E. S. Duthie. —p. 455.
Gas Gangrene Following Injection of Adrenalin. Eva V. Cooper. —p. 459.
Bacterium Coli Meningitis Treated with Sulfathiazole. F. E. Crawley. —p. 461.

Bruxelles-Médical, Brussels

26:163-214 (Feb. 24) 1946

*Toxic Infectious Epidemic Syndrome in Newborn. M. Lust and P. Nélis. —p. 173.
Chrysotherapy for Still's Disease. B. Schlesinger.—p. 185.

Toxic Infectious Epidemic Syndrome of Newborn.—An epidemic manifested by signs of intoxication associated with dehydration and diarrhea has recently been raging in parts of Belgium. The newborn and babies several weeks old were affected particularly. The temperature of the patients varied from 99 to 99.4 F. Hypothermia was recorded in a considerable number of cases. Death occurred within thirty-six to forty-eight hours but also after a prolonged course of from five to seven or even more days. The mortality rate varied from 40 to 50 per cent; in some cities it reached 60 and even 100 per cent. Postmortems did not reveal any lesions or signs of irritation of the alimentary canal. The etiology and the pathogenesis of this disease are not known, but parenteral infection seems likely, although the alimentary canal cannot be excluded.

Semaine des Hôpitaux de Paris

22:209-252 (Feb. 14) 1946

*Neurosurgical Treatment of Dyskinesia (Choreoathetoid Movements, Dystonia, Tremor). M. David and H. Hecaen.—p. 209.
Hertwig-Magendie Phenomenon. P. Desvignes.—p. 220.
Study of Results of Oscillometry. A. H. Israel and H. Rendu.—p. 222.

Neurosurgical Treatment of Dyskinesia.—David and Hecaen report the occurrence of torsion spasm in the right arm associated with spasmodic torticollis, tremor of the arm and hand and choreoathetoid movements of hemiballism type in a man aged 40. Conservative treatment was ineffective. Neurosurgical treatment consisted in resection of areas 4 and 6 of the cortex, followed by electrocoagulation. All the involuntary movements disappeared almost immediately after the cortical operation and did not recur for five weeks of electrocoagulation. Then the torsion spasm and the tremor reappeared, but the choreoathetoid movements and the spasmodic torticollis did not recur within ten months after the intervention. Although 1 case is not enough to form a basis for drawing definite conclusions, the authors emphasize that treatment for tremor of Parkinson's type must be different from that for choreoathetosis.

22:309-358 (Feb. 28) 1946

Hürler's Polydystrophy—Ellis's Gargoylism: Report of 3 New Cases. R. Debré, J. Marie and S. Thieffry.—p. 309.
Pulmonary Emphysema and Primary Tuberculous Infection. J. Marie and G. Sée.—p. 320.
Meningococcic Gangrenous Purpura. J. Marie, P. Seringe, Miss M. Cousin and Mrs. S. J. Marie.—p. 326.
*Acute Diabetes Mellitus of Infectious Origin in Children: Its Rapidly Regressive Course. J. Marie, P. Seringe, H. Rouèche and P. Maurice. —p. 338.

Diabetes Mellitus of Infectious Origin in Children.—Marie and his associates report acute diabetes mellitus in a girl aged 10 years and a boy aged 11. In both cases the history did not reveal any heredofamilial diabetes. Both children were in perfect health until the girl had scarlet fever and the boy infectious jaundice. In both cases polydipsia and polyuria appeared suddenly in the course of the infectious disease. In the girl, acidosis and a precomatose condition developed on the forty-fifth day of the scarlet fever. This strongly suggests that the diabetes did not precede the scarlet fever, since a diabetic child with scarlet fever or measles will develop acidosis and coma during the first days of the infectious disease. Symptoms of coma appeared after the temperature came to normal and after the rash had disappeared. The glycemia was reduced from 4.16 Gm. to 1.25 Gm. within twenty-two hours of the administration of insulin. In both cases the carbohydrate tolerance improved rapidly, so that insulin treatment of the girl was discontinued after twenty-two days and of the boy after sixty-four days. Both children were placed on a high carbohydrate diet, and glycosuria did not recur. This rapid and complete reversibility of the glycoregulatory disturbance seems to be exceptional in acidosic diabetes of children. Acute infectious regressive diabetes mellitus may therefore be considered to be a variety of infantile diabetes.

Schweizerische medizinische Wochenschrift, Basel

75:1025-1048 (Nov. 24) 1945

*Diagnostics and Surgical Therapy of Cerebral Manifestations of Endangiitis Obliterans of Winiwarter-Buerger. H. Krayenbühl.—p. 1025.
Importance of Tomography in Absence of Cavities in Tuberculosis of Lungs. F. Rotach.—p. 1029.
Sulfonamide Therapy for Acute Dyspepsia with "Yellow Stools." A. Hottinger.—p. 1032.
Hazards of Constriction of Extremity for Control of Bleeding. Z. Mester.—p. 1033.
Therapy of Obstructive Jaundice. O. Šmahel.—p. 1035.
Chorea Caused by Injury of Superior Peduncle in Light of Experimental Research. S. Bürgi.—p. 1036.

Cerebral Manifestations of Endangiitis Obliterans.—Krayenbühl reports 25 cases of cerebral manifestations of Winiwarter-Buerger's endangiitis obliterans. In 3 of these the cerebral manifestations accompanied a more or less generalized endangiitis obliterans, while in 22 the endangiitis was restricted to the cerebral blood vessels. Careful cardiovascular examination and cerebral arteriography offer considerable aid to the diagnosis of the rare cases of the first group. Diagnosis proved more difficult in the second group. The age at which the initial symptoms of the disease occurred varied from 11 to 58 years. Signs of unilateral motor or sensory paralysis of various degree and extent in all the patients were revealed on examination or by the history. Ocular symptoms were rare. Temporary spasms of the vessels of the retina were not observed. A drop in arterial blood pressure of the retina was demonstrated occasionally. There were no symptoms of increased intracranial pressure. In 12 cases the complete occlusion or a more or less high degree of constriction of the internal carotid artery was demonstrated at the point where the common carotid artery gives off the internal carotid artery; this, therefore, is to be considered as the area of predilection of the vascular process. In 4 cases the occlusion of the internal carotid artery occurred in the carotid "siphon"; this term is applied to the point where the internal carotid artery gives off the middle cerebral artery.

Revista Médica de Chile, Santiago

73:1007-1112 (Dec.) 1945

Cardiovascular Syphilis (Late Syphilis): Diagnosis of Simple Aortitis Without Complications; Anatomic and Clinical Study. J. Alvayay, H. Apablaza and E. Solari.—p. 1007.
New Concepts on Diagnosis and Treatment of Acute Pancreatitis. H. Reyes.—p. 1026.
Bacterial Endocarditis: Anatomoclinical Study and Etiopathogenetic Considerations. A. Garretón S. and G. Dussaillant G.—p. 1034.
*Peptic Ulcer of Esophagus. F. Diaz and M. Riera.—p. 1053.
Postoperative Cholangiography. E. Duval.—p. 1060.
Rectosigmoidal and Sigmoidal Cancer. J. Castro G.—p. 1070.
Carcinoma of Rectum: Problems Relating to Diagnosis and Treatment. R. Estevez C.—p. 1077.

Esophageal Peptic Ulcer.—Díaz and Riera report 7 cases of peptic ulcer of the esophagus. Statistically there is 1 case of esophageal peptic ulcer for every 30 cases of gastric ulcer. Peptic ulcer of the esophagus almost always is located within the distal third of the esophagus slightly above the cardia or at the level of the diaphragmatic hiatus. Probable etiologic factors include the digestive action of gastric juice, esophageal varices and conditions which lead to dysfunction of the cardia and favor backflow of gastric juice, such as pyloric stenosis, diaphragmatic hernias, short esophagus or thoracic stomach. Pain, which at times is burning and which coincides

or follows deglutition, is the most frequent symptom. Some patients have dysphagia, but in others it is absent. Vomiting and particularly regurgitation are important symptoms. Important roentgenologic and endoscopic findings include spasm, appearance of a defect, slow esophageal passage with persistence of barium in the ulcerated portion, stenosis with dilatation above, insufficiency of the cardia and dilatation of the distal third of the esophagus.

Acta Medica Orientalia, Jerusalem

5:1-32 (Jan.) 1946

*Trial with Penicillin in Certain Cases of Thromboangiitis Obliterans (Buerger's Disease): Preliminary Report. F. Mandl.—p. 1.
Thromboangiitis Obliterans, a Disease of Entire Vascular System. L. Boehm.—p. 8.
Amebiasis and Rheumatism. E. Lasowski.—p. 14.
Thrombosis of Cavernous Sinus: Case. H. J. Stern.—p. 17.
Jubilee Assembly of Palestinian Radiologists. S. Glassheib.—p. 19.

Penicillin in Thromboangiitis Obliterans.—Of the 8 cases which Mandl treated with penicillin, 7 presented severe thromboangiitis obliterans and 1 thrombophlebitis migrans without particular involvement of arteries. Sympathectomy had been done in 6 of these 8 cases and had been repeated in 2. In 2 of the cases of thromboangiitis obliterans of stage 2, penicillin therapy was the first measure. In 2 cases penicillin therapy followed immediately on amputation of a toe. The effect of penicillin therapy was immediate in 7 of 8 cases. The effect of penicillin was least pronounced in the mildest case. The first and most important effect was relief of pain, so that the use of morphine could be dispensed with. When the patients got up, the walking distance had increased in all of them, which justified the conclusion that the obstructing process of the arteries and veins also had been favorably influenced. The objective examination of the permeability of the blood vessels and the collateral circulation by oscillometry showed no improvement. The thermometric findings also remained practically unchanged. The author admits that penicillin does not cure thromboangiitis obliterans and that its effects are not comparable to those of surgery. Nevertheless, subjective symptoms can be greatly improved and there is a definite influence on the "inflammatory elements."

Nordisk Medicin, Gothenburg

28:2005-2070 (Oct. 5) 1945. **Partial Index**

Repeated Failure in Serologic Diagnosis of Syphilis in Patient with Secondary Syphilis. A. Tvedt.—p. 2007.

Hospitalstidende

Medical Practice in Concentration Camps. P. Thygesen.—p. 2009.
Calmette Vaccination by Scarification Method. V. Sindbjerg-Hansen and P. Møller.—p. 2018.

Medicinsk revue

*Schick Test During Diphtheria Epidemic. T. M. Vogelsang and B. O. Kryvi.—p. 2021.
*Diphtheria in First Year of Life. J. Bøe.—p. 2030.
*Laryngeal Diphtheria. T. Kahrs.—p. 2034.

Hygiea

Stricture of Pulmonary Artery Due to Shrinking Mediastinitis. G. Söderberg.—p. 2051.

Schick Test During Diphtheria Epidemic in Bergen.—The diphtheria epidemic which flared up in Bergen, a city of 105,000, late in 1941 apparently reached its peak in 1943-1944. In 1943, 519 cases were reported. From September 1944 to February 1945 the Schick test was performed on 3,000 unvaccinated persons aged from 16 to 71, mostly from 21 to 50, mainly from the better social class. The reaction was positive in 67 per cent, a remarkably high percentage in an epidemic of so long duration; of the 117 who had had diphtheria, 58 per cent were Schick positive. In 120 additional persons vaccinated against diphtheria the test gave a positive reaction in 5 per cent.

Diphtheria in First Year of Life.—In the 106 cases of diphtheria in infancy in the recent epidemics in Bergen and Throndheim there were 15 deaths (14 per cent), with 11 deaths in the 76 cases in infants under 6 months. Bøe says that diphtheria in infants is often not recognized even in epidemic periods. Nasal diphtheria is its most frequent form. Long continued coryza is often the only symptom, till disturbances in nutrition occur and the infant becomes highly susceptible to other infections, especially bronchopneumonia. Diphtheria in infants seems to tend more than in the older age groups to spread downward. Vaccination is without practical value, as so few infants form antibodies. The efficacy of serum treatment was doubtful. Possibly in epidemics the newborn might be protected by vaccination of the Schick positive mothers some time before delivery.

Laryngeal Diphtheria.—Kahrs says that the 140 cases of laryngeal diphtheria treated from 1941 to 1945 constituted 4.6 per cent of the diphtheria cases in Stavanger Hospital; 55 per cent of the patients were under 6 months and about 85 per cent were under 20. Therapy consisted in application of serum, steam and in 62 cases of tracheotomy. Thirty-two patients (22.9 per cent) died; of those operated on, 23 died. It is at times difficult to distinguish laryngeal diphtheria from acute laryngitis. The onset of laryngeal diphtheria is slower than that of laryngitis, with a more gradually developing difficulty in respiration and often at the start slight symptoms of angina. The disease is as grave today as in the past.

28: 2071-2130 (Oct. 12) 1945. **Partial Index**

Pathogenesis of Hypertension. J. Bing.—p. 2071.
Reform in Medical Studies. W. Kerppola.—p. 2082.
Intrasternal Evipan Anesthesia. J. B. Dalgaard.—p. 2083.

Hospitalstidende

*Postoperative Phlebitis, Thrombosis and Embolism in Patients Out of Bed from Day After Operation. E. Dahl-Iversen.—p. 2085.
Osteochondritis Dissecans: Contribution to Question of Etiology. K. Bang Rasmussen.—p. 2088.
*Cancer of Gallbladder. P. E. Andersen.—p. 2091.

Hygiea

Ischialgia and Vascular Spasm. T. Lindqvist and V. Näslund.—p. 2095.
Lymphadenosis Benigna Cutis. B. Bäfverstedt.—p. 2101.
Rapid Method for Cultivation of Gonococci. H. Englesen.—p. 2106.
Complication in Blood Transfusion Due to Rh Factor in Pregnant Woman Who Had Borne Six Normal Children. B. Löfgren.—p. 2109.
Results with Acid Diet and Acid Therapy in Gastric Achylia with Anemia and Tuberculosis. E. Forsgren.—p. 2112.
Nucleotide Metabolism in Lymphocytes. B. Thorell.—p. 2115.

Phlebitis, Thrombosis and Embolism in Patients Out of Bed from Day after Operation.—Dahl-Iversen states that during the last three years patients after laparotomy without drainage, after operations on the external genitalia, perineum, anus, vagina and uterus, after operations on the head, neck, trunk and extremities, on the bladder and prostate and herniotomy have been allowed to be up from the day following the intervention. In the 1,736 patients thus treated postoperative complications of phlebitis, thrombosis and embolism have been reduced from 3.5 per cent before the introduction of the procedure to 0.58 per cent. The incidence of recurrence after herniotomy has not been increased; follow-up of 110 patients two years after the operation showed recurrence in 3 instances (2.7 per cent).

Cancer of Gallbladder.—According to Andersen there are two types of cancer of the gallbladder, one with a long standing history of gallbladder disease, the other with a brief history and symptomless course. The possibility of an early diagnosis is slight. Roentgen diagnosis succeeds only in exceptional cases. The condition may be surmised when there is a constant dull pain under the right costal arch in a long standing gallbladder disturbance associated with increased sedimentation rate, weakness, loss of weight and late local signs in the abdomen. The cancer soon spreads to the liver by invasion and metastasis. There is little chance for effective therapy. The prognosis is relatively favorable only in cases in which the cancer is an accidental finding in a gallbladder removed for other cause. In the literature only 7 cases free from recurrence after five years have been reported; Heller reports a case with recurrence after six years. In from 80 to 90 per cent cancer of the gallbladder develops in a gallbladder with stones, and 5 to 10 per cent of all patients with gallstones are likely to die from cancer of the gallbladder. Prophylaxis consists in early operation on patients with gallstones. Microscopic examination of 80 cases of cancer of the gallbladder revealed 34 adenocarcinomas, 28 scirrhous cancers and 18 medullary cancers (Gröbl and Pohl).

Book Notices

The Chemistry of Anesthesia. By John Adriani, M.D., Director, Department of Anesthesia, Charity Hospital of Louisiana at New Orleans. Fabrikoid. Price, $7. Pp. 536, with 45 illustrations. Springfield, Ill.: Charles C Thomas, 1946.

Here is a definite milestone in the advancement of the recently recognized specialty of anesthesiology in American medicine. The author's statements that chemistry plays a significant role in anesthesiology and that it is the most widely reflected fundamental science in medicine certainly are truisms. One has but to glance at the three major parts of the text, on inorganic chemistry related to anesthesia, organic chemistry related to anesthesia and biochemistry related to anesthesia, to realize something of the scope of this fundamental science in this specialty. As a corollary it reflects the importance of anesthesiology in the entire field of biology and medicine.

The book shows careful thought and planning. It indicates months of work, for in the first two divisions there is collected and presented in an interesting manner and a logical, orderly sequence the essential and basic physical and chemical information to which ready and frequent reference is desired. This includes a clear explanation of the well known laws for behavior of gases and the "why and how" of apparatus in which they are used. The basic principles of the structure and behavior of organic compounds are very well presented. Drugs are classified and discussed by groups on the basis of their physiologic effects on the autonomic nervous system or by general action such as the analeptics, local anesthetics or opium derivatives. Only very pertinent information is included.

The effects which anesthetic agents can be expected to produce in alteration of normal physiologic function are briefly and concisely given in the third division of this useful book. It includes a discussion of the chemical basis of the proposed mechanisms of narcosis. The effects of anesthesia on composition of body fluids require three chapters, including in the first such topics as intracellular water, blood volume, interstitial fluid volume, the erythrocyte and hemoglobin. The second chapter of this discussion is concerned with effects of anesthetic agents on electrolytes, total base, the common cations and anions, the halogens, sulfates, lactates and acid-base balance. The latter topic is particularly well discussed and is followed by the practical topic of convulsions in anesthesia and the acid-base aspects of such an accident.

The third and concluding chapter, on body fluids, is concerned with the organic constituents, nonprotein nitrogen, urea, uric acid, amino acids, creatine and creatinine, ammonia, guanidine bases and plasma proteins. It includes also the changes in nonprotein nitrogen during anesthesia, the clotting of blood, carbohydrates and cerebrospinal fluid. Chapters on anesthetic effects on the liver, on formation and composition of the urine, on lipoid and nervous tissues and on enzymes, vitamins and hormones also are adequately and concisely presented.

Every qualified medical anesthetist would profit by frequent reference to this book. It is indicative of the broad basic principles on which the specialty of anesthesiology is founded.

Hypoglycemies spontanées: Le traitement chirurgical de l'hyperinsulinisme. Par P. Mallet-Guy, professeur agrégé à la Faculté de médecine de Lyon, et P. Maillet, prosecteur à la Faculté de médecine de Lyon. Préface du Pr H. Mondor. Paper. Price, 55 francs. Pp. 102, with 17 illustrations. Paris: Masson & Cie, 1944.

This small monograph deals with all the clinical phases of hyperinsulinism, emphasizing islet cell tumors. An interesting point brought out in the text is that hypoglycemia may in rare instances be associated with chronic fibrous pancreatitis. In this country at present it has little scientific value, since it is based on the American literature up to 1938 and the French literature up to 1943. This is no fault of the authors, who are eminent men in surgery and medicine respectively in France, but is due to the isolation of the conquered countries from the rest of the world during the German occupation. The book is written in the classic French style, an example of logic, clarity and conciseness. The American surgeon who might happen to read the volume will be interested to note that here is a European treatise dealing with a field developed primarily in this country and which acknowledges American leadership.

Medicine in Industry. By Bernhard J. Stern, Ph.D., Visiting Professor of Sociology, Yale University, New Haven, Connecticut. Studies of the New York Academy of Medicine, Committee on Medicine and the Changing Order. Cloth. Price, $1.50. Pp. 209. New York: Commonwealth Fund; London: Oxford University Press, 1946.

This is one of a series of monographs published under the auspices of the Committee on Medicine and the Changing Order of the New York Academy of Medicine. The foreword states that the committee was established in 1942 because of the conviction that the medical profession is confronted with problems which require thorough study and that the academy had both the opportunity and the responsibility to contribute to the effective solution of these problems. The instructions of the council to the committee were to review the nature, quality and direction of the economic and social changes that are taking place now and that are to be anticipated in the immediate future, to define in particular how these changes are likely to affect medicine in its various segments and to determine how the best elements in the science and art of medicine and in its service to the public may be preserved, embodied and extended in whatever new social patterns may ultimately appear. To date there are four books in the series. This is the second which has been written by Dr. Stern, the other being American Medical Practice in the Perspectives of a Century. The monograph presents an extended review of the scientific developments in industrial medicine, social and legislative backgrounds, a discussion of the extent of industrial disabilities and of the handicapped worker in industry, a review of the present status of preventive services and of medical care and health insurance plans in industry and a chapter on the industrial physician. The book contains a wealth of factual material and is well written. It develops the well known thesis that our social organization has not kept pace with the development of medical science. It is apparent that the author considers the centralization of control and regulation of working and living conditions under federal jurisdiction an important means of improving standards in the field of industrial health. One is left with a feeling of regret that an overemphasis of the class struggle detracts greatly from what might well be a valuable objective contribution.

In vitro Studien zur lokalen Sulfanilamid-Therapie. Von Julius Hirsch. Aus dem Hygiene-Institut der Universität Istanbul. Paper. Pp. 30, with 6 illustrations. Istanbul: Kenan Matbaasi, 1946.

The experiments reported in this paper were carried out by Hirsch of the Hygiene Institute of the University of Istanbul in collaboration with H. Özerengin. The authors stress that local administration of the sulfonamides gives a concentration at least one hundred times greater than the concentration in the blood after oral or parenteral administration. To gain insight into the mode of action of the sulfonamides during local administration the authors investigated nine sulfonamide preparations in 0.01 molar concentration against sixteen different cocci and bacteria in a buffered (p_H 7.0) nutrient solution of peptone and yeast extract. The presence of products of protein decomposition and extracts of yeast cells produces similar biochemical conditions for the activity of sulfonamides as exist frequently in local infections as the result of presence of tissue detritus or pus. The authors discuss the phenomenon of selective activity of sulfonamide compounds and stress certain practical applications of the experimental results for the local therapy. They believe that in view of the frequency of mixed infections compound preparations should be produced which contain substances of varying selectivity. Such polyvalent preparations could find general application and would dispense with the necessity of bacteriologic control in daily practice.

Nomenclatura y clasificación de los tumores del sistema nervioso. Por P. del Rio Hortega. Paper. Pp. 63, with 67 illustrations. Buenos Aires: Lopez & Etchegoyen S. R. L., 1945.

This is a brief presentation in a South American publication of the views of the famous late Spanish neurohistologist and neuropathologist on the classification of tumors of the central, peripheral and sympathetic nervous systems. Each tumor is briefly discussed and adequately illustrated, but details of the clinical characteristics and of the gross and microscopic appearance of the tumors are not presented. The index is brief, and there are no references to the literature.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

CARBONATED BEVERAGES FOR YOUNG CHILDREN

***To the Editor:*—Is there any contraindication in giving carbonated beverages, particularly those containing caffeine (the "cola" drinks), to children from age 1 upward?** **M. C., A. U. S.**

ANSWER.—This question is considered at some length in a report of the Council on Foods and Nutrition under the title of "Some Nutritional Aspects of Sugar, Candy and Sweetened Carbonated Beverages" published in THE JOURNAL, Nov. 7, 1942, page 763. The following comments were taken from the Council's report.

The use of caffeine by children is not considered wise, but especially undesirable is the fact that the use of sweetened drinks displaces the use of other foods. Sweetened drinks tend to replace that important part of the child's diet, milk.

With older children it is obvious that a school lunch suffers gross deterioration when the beverage chosen in place of milk is a solution of sugar in flavored water. It is also generally conceded that excessive sugar eating between meals, or sugar eaten in smaller amounts within an hour of the regular meal time, impairs the appetite for foods at meals.

Many investigators have attributed harmful effects to the teeth of the excessive use of highly refined sugars. The indiscriminate and uncontrolled supply of poor food for consumption between meals cannot be condoned with impunity.

ADMINISTRATION OF COLD PLASMA

***To the Editor:*—Is there any physiologic motive justifying the administration of ice cold plasma to patients under anesthesia? I noticed two immediately fatal reactions in which the patients never regained consciousness, and although the *post hoc* is not necessarily the *propter hoc*, I am inclined to question the value of the procedure. I should also like to know the effect of ice cold liquids on the intima of the vein chosen for transfusion. Has any pathologic work been done on the subject?** **M.D., Ontario.**

ANSWER.—The physiologic motive justifying the administration of ice cold plasma to patients under anesthesia is obscure. Unless a special apparatus is used or the material is given at high speed, the plasma warms up considerably before reaching the patient's blood stream. On the other hand the administration of plasma or any other parenteral fluid without warming, directly from the refrigerator, does not cause any reaction attributable to the low temperature itself. There is far more danger in improper heating of plasma and other parenteral fluids than there is in using them directly from the refrigerator.

Plasma preserved at refrigerator temperature flocculates heavily. It should be carefully filtered immediately before transfusion or while it is administered. Failure to do so might cause severe, possibly fatal, reactions. Maintenance of the plasma in the frozen or dried state practically eliminates flocculation.

SUDDEN DEATH

***To the Editor:*—What causes sudden death of a middle aged man, apparently well, after sudden exertion? Also what is the cause of sudden death of adults three or four days after operation following mild exertion such as getting out of bed?** **M.D., New York.**

ANSWER.—Probably the most common cause of sudden death in middle adult life of a man apparently well and following exertion is some form of cardiac disorder. This may be basically an unrecognized valvular disease or atherosclerosis of the coronary arteries, with sudden occlusion and cardiac infarction.

Sudden death of adults several days following an operation, with or without exertion, is often due to embolism caused by dislodgment of thrombi formed in the veins of the trunk or extremities and carried as emboli by the venous blood into the right side of the heart, the pulmonary artery or its branches. Cardiac conditions, as mentioned in the preceding paragraph, could be causal.

While these represent highly probable causes of death under the conditions mentioned, one should not presume that the cause of a specific death can be established on the basis of such probability. A complete postmortem examination is necessary.

ANOMALY OF THE NECK WITH COUGH

***To the Editor:*—A girl aged 6 years has a cough which is hoarse in character, occurs during the time she is awake and is sudden and short. It is nonproductive and is not accompanied by fever or any other complaint or laboratory finding except slight enlargement of the hilar glands. The cough has persisted for six months. The unusual finding is that on coughing or during speech a large soft swelling appears suprasternally, apparently a large air pocket. Please advise regarding possible further efforts regarding diagnosis or treatment.** **Bernard Farfel, M.D., Houston, Texas.**

ANSWER.—Thyroglossal cysts are among the most common anomalies found in the neck. Complications that occur are spontaneous rupture and infection. The cyst may be injected with methylene blue and the patient then observed to see if the material appears in the throat. Another method is to aspirate the cyst and inject material opaque to x-rays. If the latter procedure is carried out, the material should be reaspirated afterward.

Treatment with sclerosing materials has been generally abandoned. Radical extirpation is the procedure of choice and should be carried out in the operating room.

TOXICITY OF BARBITURATES

***To the Editor:*—Recently articles have appeared in the daily press concerning the toxic effects of barbiturates when taken with alcoholic beverages, mentioning a type of "jag." What is the lethal dose of barbiturates (single dose)? Is the lethal dose different for the various salts of barbituric acid? Is the lethal dose diminished if the barbiturate is with alcohol?** **George R. Moffitt, M.D., Harrisburg, Pa.**

ANSWER.—Barbiturates are potent narcotics which in large doses depress the brain and the medullary centers. The depression may be intermingled with euphoria, confusion and excitement analogous to the alcoholic "jag." Neurotic persons are especially prone to develop such reactions. All the commonly used barbiturates have similar actions but differ in potency and in speed of action and recovery. Sollmann's Manual of Pharmacology tabulates the reported fatal doses of some barbiturates:

	Smallest Dose Reported as Fatal:	Largest Dose Reported as Survived:
Allonal	36 tablets	40 tablets
Amytal	1.6 Gm. (25 grains)	7 Gm. (108 grains)
Barbital	2 Gm. (30 grains)	33 Gm. (500 grains)
Phenobarbital ...	1.7 Gm. (26 grains)	9 Gm. (135 grains)

The various salts of a given barbituric acid have practically the same toxicity as the acid itself.

The toxicity of alcohol is additive and therefore would tend to lower the lethal dose. However, this difference would not be important unless an unusually large quantity of alcohol was consumed.

MIGRATORY PHLEBITIS, BUERGER'S DISEASE AND PULMONARY EMBOLISM

***To the Editor:*—It has been stated that 20 to 30 per cent of proved cases of thromboangiitis obliterans give a history of migratory phlebitis. Is there any report of the percentage of cases of migratory phlebitis in young people which eventually develop into Buerger's disease? What is the frequency of pulmonary emboli in migratory phlebitis as compared with phlebothrombosis? Should femoral vein ligation be considered in every case with a history of several bouts of superficial phlebitis?** **Saul Mackover, Captain, M. C., A. U. S.**

ANSWER.—It is safe to assume that every case of migratory phlebitis in young men who do not have preexisting varicosities is an early form of Buerger's disease. No statistics can be quoted as to the number of cases in which this disease in its full-blown form later develops, since migrating phlebitis responds readily to abstinence from tobacco, sufficient water and salt intake and sodium tetrathionate. However, untreated or misdiagnosed cases invariably show the loss of one or several pulses in the upper or lower extremities if the period of observation is long enough.

Migratory phlebitis does occasionally produce pulmonary emboli but is then usually associated with additional deep venous thromboses. This occurs in more severe forms of the disease. Femoral vein ligation would be indicated if the source of emboli could be localized to one or both of the lower extremities. It should be recognized, however, that migrating phlebitis varies greatly from the bland phlebothrombosis of the deep veins, that the clotting mechanism is disturbed and that vascular sensitization may be present. Thus some of the pulmonary symptoms may be due to localized intimal reactions, localized thromboses, and are not embolic in nature.